	Type	L #	Hits	Search Text	DBs
1	IS&R	L1	13375	(422/50,55,58,63,68.1,81,82,100,101,102,103,104).CCLS.	US-PGPUB; USPAT
2	BRS	L2	3536	1 and (microfluidic or fluidic or cartridge or biochip or chip)	US-PGPUB; USPAT
3	BRS	L3	2780	2 and (enrich$8 or concentrat$8 or filt$8)	US-PGPUB; USPAT
4	BRS	L4	1493	2 and sample near8 (enrich$8 or concentrat$8 or filt$8)	US-PGPUB; USPAT
5	BRS	L5	875	4 and (drop$6 or microdrop$6)	US-PGPUB; USPAT
6	BRS	L6	339	4 and sample near8 (drop$6 or microdrop$6)	US-PGPUB; USPAT
7	BRS	L7	284	3 and cell near8 (lysis or lytic or disrupt$6 or break$6)	US-PGPUB; USPAT
8	BRS	L8	2299	3 and (mix$6 or stir$6 or agitat$6)	US-PGPUB; USPAT
9	BRS	L9	1280	4 and (mix$6 or stir$6 or agitat$6)	US-PGPUB; USPAT
10	BRS	L10	440	4 and (mix$6 or stir$6 or agitat$6) with reagent with sample	US-PGPUB; USPAT
11	BRS	L11	86	7 and (mix$6 or stir$6 or agitat$6) with reagent with sample	US-PGPUB; USPAT
12	BRS	L12	674	2 and (mix$6 or stir$6 or agitat$6) with reagent with sample	US-PGPUB; USPAT
13	BRS	L13	802	2 and (pcr or (polymerase near8 chain near8 reaction))	US-PGPUB; USPAT
14	BRS	L14	707	3 and (pcr or (polymerase near8 chain near8 reaction))	US-PGPUB; USPAT
15	BRS	L15	193	13 and (mix$6 or stir$6 or agitat$6) with reagent with sample	US-PGPUB; USPAT

	Type	L #	Hits	Search Text	DBs
16	BRS	L16	174	14 and (mix$6 or stir$6 or agitat$6) with reagent with sample	US-PGPUB; USPAT
17	BRS	L17	8	2 and valve same filter same actuator	US-PGPUB; USPAT
18	BRS	L18	8	3 and valve same filter same actuator	US-PGPUB; USPAT
19	BRS	L19	32	3 and valve and filter same actuator	US-PGPUB; USPAT
20	BRS	L20	355	3 and valve and filter and actuator	US-PGPUB; USPAT
21	BRS	L21	247	3 and valve and filter and gas near8 (pressure or actuat$6)	US-PGPUB; USPAT
22	BRS	L22	154	4 and valve and filter and gas near8 (pressure or actuat$6)	US-PGPUB; USPAT
23	BRS	L23	4	2 and valve same (channel or microchannel or chamber) same filter same actuator	US-PGPUB; USPAT
24	BRS	L24	233	2 and valve same (channel or microchannel or chamber) and filter and actuator	US-PGPUB; USPAT
25	BRS	L25	98	5 and valve same (channel or microchannel or chamber) and filter and actuator	US-PGPUB; USPAT
26	BRS	L26	56	7 and valve same (channel or microchannel or chamber) and filter and actuator	US-PGPUB; USPAT
27	BRS	L27	257	2 and (resistive or resistance or resistor) near8 heater	US-PGPUB; USPAT
28	BRS	L28	110	14 and (resistive or resistance or resistor) near8 heater	US-PGPUB; USPAT

	Type	L #	Hits	Search Text	DBs
29	BRS	L29	126	14 and (resistive or resistance or resistor) near8 (heater or heating near8 element or strip)	US-PGPUB; USPAT
30	BRS	L30	213	2 and silicon near8 oxide with (substrate or layer)	US-PGPUB; USPAT
31	BRS	L31	1339	2 and substrate with (silicon or glass or ceramic or plastic or quartz)	US-PGPUB; USPAT
32	BRS	L32	1285	2 and substrate near8 (silicon or glass or ceramic or plastic or quartz)	US-PGPUB; USPAT
33	BRS	L33	198	30 and substrate near8 (silicon or glass or ceramic or plastic or quartz)	US-PGPUB; USPAT
34	BRS	L34	360	2 and (channel or microchannel or chamber) near8 network	US-PGPUB; USPAT
35	BRS	L35	115	34 and (pcr or (polymerase near8 chain near8 reaction))	US-PGPUB; USPAT
36	BRS	L36	20	35 and valve and filter and gas near8 (pressure or actuat$6)	US-PGPUB; USPAT
37	BRS	L37	177	4 and (drop$6 or microdrop$6) near8 (synth$ or prepar$6 or dispens$8)	US-PGPUB; USPAT
38	BRS	L38	63	4 and sample near8 (drop$6 or microdrop$6) near8 (synth$ or prepar$6 or dispens$8)	US-PGPUB; USPAT
39	BRS	L39	8	2 and thermopneumatic near8 actuator	US-PGPUB; USPAT
40	BRS	L40	16	2 and thermopneumatic near8 actuat$6	US-PGPUB; USPAT
41	BRS	L41	28	2 and thermopneumatic	US-PGPUB; USPAT

	Type	L #	Hits	Search Text	DBs
42	BRS	L42	9	2 and therm$8 near8 actuat$8 with gas	US-PGPUB; USPAT
43	BRS	L43	65	2 and therm$8 near8 actuat$8	US-PGPUB; USPAT
44	BRS	L44	645	2 and (hydrophobic or hydrophilic) near8 surface	US-PGPUB; USPAT
45	BRS	L45	154	2 and (hydrophobic or hydrophilic) near8 surface with (channel or microchannel)	US-PGPUB; USPAT
46	BRS	L46	597	2 and (vent or discharge or excess or overflow) near8 (channel or microchannel or port or output)	US-PGPUB; USPAT
47	BRS	L47	869	2 and (air or discharge or excess or overflow) near8 (channel or microchannel or port or output or vent)	US-PGPUB; USPAT
48	BRS	L48	234	8 and pcr same reagent	US-PGPUB; USPAT
49	BRS	L49	156	9 and pcr same reagent	US-PGPUB; USPAT
50	BRS	L50	101	10 and pcr same reagent	US-PGPUB; USPAT
51	BRS	L51	6	5 and (split$6 or divide) near8 (drop$6 or microdrop$6)	US-PGPUB; USPAT
52	BRS	L52	6	5 and (split$6 or divide) with (drop$6 or microdrop$6)	US-PGPUB; USPAT
53	BRS	L53	742	2 and injection near8 (mold$6 or mould$6)	US-PGPUB; USPAT
54	BRS	L54	417	31 and injection near8 (mold$6 or mould$6)	US-PGPUB; USPAT

	Type	L #	Hits	Search Text	DBs
1	BRS	L1	13793	microfluidic	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
2	BRS	L2	1223446	(microfluidic or cartridge or chip or biochip)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
3	BRS	L3	330384	2 and (enrich$8 or concentrat$8 or filter$8)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB

	Type	L #	Hits	Search Text	DBs
4	BRS	L4	112523	3 and (drop$6 or microdrop$6)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
5	BRS	L5	203354	2 and (drop$6 or microdrop$6)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
6	BRS	L6	25365	2 and cell near8 (lys$8 or lytic)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB

	Type	L #	Hits	Search Text	DBs
7	BRS	L7	24942	3 and cell near8 (lys$8 or lytic)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
8	BRS	L8	4626	2 and gas near8 actuat$6	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
9	BRS	L9	98	8 and thermopneumat$6	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB

	Type	L #	Hits	Search Text	DBs
10	BRS	L10	26874	3 and cell near8 (lys$8 or lytic or disrupt$6)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
11	BRS	L11	26711	3 and cell near8 (lys$5 or lytic or disrupt$5)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
12	BRS	L12	1	2 and point near4 of near4 care	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB

	Type	L #	Hits	Search Text	DBs
13	BRS	L13	2673	2 and point with care	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
14	BRS	L14	1825	3 and point with care	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
15	BRS	L15	368	11 and point with care	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB

	Type	L #	Hits	Search Text	DBs
16	BRS	L16	48067	3 and (dna or rna or pcr or nucleotide or polynucleotide)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
17	BRS	L17	22426	4 and (dna or rna or pcr or nucleotide or polynucleotide)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
18	BRS	L18	11741	3 and cell near8 (lys$5 or lytic or disrupt$5) same (dna or rna or pcr or nucleotide or polynucleotide)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB

	Type	L #	Hits	Search Text	DBs
19	BRS	L19	76	18 and (fluid or liquid) near8 (pump$6 or transport$6 or propulsion) same gas near8 pressur$6	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
20	BRS	L20	17	19 and thermopneumat$6	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
21	BRS	L21	9	19 and gas near8 actuat$6	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB

	Type	L #	Hits	Search Text	DBs
22	BRS	L22	268	16 and gas near8 actuat$6	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
23	BRS	L23	13	13 and gas near8 actuat$6	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
24	BRS	L24	245911	2 and (channel or microchannel)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB

	Type	L #	Hits	Search Text	DBs
25	BRS	L25	118836	24 and (enrich$8 or concentrat$8 or filter$8)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
26	BRS	L26	18293	24 and (enrich$8 or concentrat$8 or filter$8) near8 sample	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
27	BRS	L27	8276	26 and (deoxyribonucleic or dna or rna or pcr or nucleotide or polynucleotide)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB

	Type	L #	Hits	Search Text	DBs
28	BRS	L28	5993	26 and (polymerase near6 chain near8 reaction or pcr)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
29	BRS	L29	1223	26 and sample near8 (drop$6 or microdrop$6)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
30	BRS	L30	9109	26 and (drop$6 or microdrop$6)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB

	Type	L #	Hits	Search Text	DBs
31	BRS	L31	172487	2 and module	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
32	BRS	L32	14115	24 and gas near8 pressure	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
33	BRS	L33	9693	25 and gas near8 pressure	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB

	Type	L #	Hits	Search Text	DBs
34	BRS	L34	1559	24 and gas near8 actuat$6	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
35	BRS	L35	6887	24 and (gas or pressure) near8 actuat$6	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
36	BRS	L36	4733	24 and cell near8 lysis	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB

	Type	L #	Hits	Search Text	DBs
37	BRS	L37	4682	25 and cell near8 lysis	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
38	BRS	L38	4146	36 and (polymerase near6 chain near8 reaction or pcr)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
39	BRS	L39	4146	36 and ((polymerase near6 chain near8 reaction) or pcr)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB

	Type	L #	Hits	Search Text	DBs
40	BRS	L40	52396	2 and (channel or microchannel) near8 (system or network)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
41	BRS	L41	1125	40 and cell near8 lysis	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
42	BRS	L42	1112	41 and (enrich$8 or concentrat$8 or filter$8)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB

	Type	L #	Hits	Search Text	DBs
43	BRS	L43	998	42 and pcr	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
44	BRS	L44	1080	42 and (deoxyribonucleic or dna or rna or pcr or nucleotide or polynucleotide)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
45	BRS	L45	80	43 and gas near8 (pressure or actuat$6)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB

	Type	L #	Hits	Search Text	DBs
46	BRS	L46	93	44 and gas near8 (pressure or actuat$6)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
47	BRS	L47	1363	40 and (resistive or resistance or resist or resistor) near8 heater	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
48	BRS	L48	45	46 and (resistive or resistance or resist or resistor) near8 heater	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB

	Type	L #	Hits	Search Text	DBs
49	BRS	L49	81	44 and (resistive or resistance or resist or resistor) near8 heater	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
50	BRS	L50	144095	2 and substrate with (glass or silicon or ceramic or plastic or quartz)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
51	BRS	L51	136211	2 and substrate near8 (glass or silicon or ceramic or plastic or quartz)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB

	Type	L #	Hits	Search Text	DBs
52	BRS	L52	709	43 and substrate near8 (glass or silicon or ceramic or plastic or quartz)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
53	BRS	L53	717	43 and substrate with (glass or silicon or ceramic or plastic or quartz)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
54	BRS	L54	188	42 and pcr with reagent	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB

	Type	L #	Hits	Search Text	DBs
55	BRS	L55	903	42 and (deoxyribonucleic or dna or rna or pcr or nucleotide or polynucleotide) same reagent	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
56	BRS	L56	3144	24 and valve with filter	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
57	BRS	L57	5347	24 and valve same filter	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB

	Type	L #	Hits	Search Text	DBs
58	BRS	L58	37	19 and valve same filter	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
59	BRS	L59	172	47 and valve same filter	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
60	BRS	L60	88	47 and therma$8 near8 actuator	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB

	Type	L #	Hits	Search Text	DBs
61	BRS	L61	41	47 and valve same filter same actuator	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
62	BRS	L62	663	24 and valve same filter same actuator	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
63	BRS	L63	467	2 and valve same filter same actuator same (channel or microchannel)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB

	Type	L #	Hits	Search Text	DBs
64	BRS	L64	3	2 and valve same filter same gas near8 actuator same (channel or microchannel)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
65	BRS	L65	6	2 and valve same filter same gas with actuat$6 same (channel or microchannel)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
66	BRS	L66	15	62 and cell near8 (lys$5 or lytic or disrupt$5)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB

	Type	L #	Hits	Search Text	DBs
67	BRS	L67	0	63 and cell near8 (lys$5 or lytic or disrupt$5)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
68	BRS	L68	570	62 and (drop$6 or microdrop$6)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
69	BRS	L69	454	63 and (drop$6 or microdrop$6)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB

	Type	L #	Hits	Search Text	DBs
70	BRS	L71	0	62 and (split or divide) near8 (drop$6 or microdrop$6)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
71	BRS	L72	0	62 and (split or divide) with (drop$6 or microdrop$6)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
72	BRS	L73	2	22 and (split or divide) with (drop$6 or microdrop$6)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB

	Type	L #	Hits	Search Text	DBs
73	BRS	L74	773	2 and (split or divide) with (drop$6 or microdrop$6)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
74	BRS	L75	483	2 and (split or divide) near8 (drop$6 or microdrop$6)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
75	BRS	L76	11360	2 and ((over near8 flow) or excess) near8 (channel or microchannel or chamber or vent or port or outlet or output)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB

	Type	L #	Hits	Search Text	DBs
76	BRS	L77	85	62 and ((over near8 flow) or excess) near8 (channel or microchannel or chamber or vent or port or outlet or output)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
77	BRS	L78	74	63 and ((over near8 flow) or excess) near8 (channel or microchannel or chamber or vent or port or outlet or output)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
78	BRS	L79	14912	2 and (hydrophobic or hydrophilic) near8 surface	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB

	Type	L #	Hits	Search Text	DBs
79	BRS	L80	66	77 and (hydrophobic or hydrophilic) near8 surface	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB
80	BRS	L81	66	78 and (hydrophobic or hydrophilic) near8 surface	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB

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FILE 'HOME' ENTERED AT 18:38:26 ON 31 MAY 2007

=> file compendex inspec caplus
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FILE 'COMPENDEX' ENTERED AT 18:38:46 ON 31 MAY 2007
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FILE 'CAPLUS' ENTERED AT 18:38:46 ON 31 MAY 2007
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=> s microfluidic or fluidic or cartridge or biochip or chip
L1      418803 MICROFLUIDIC OR FLUIDIC OR CARTRIDGE OR BIOCHIP OR CHIP

=> s l1 and enrich? or concentrat? or filt?
L2     5185037 L1 AND ENRICH? OR CONCENTRAT? OR FILT?

=> s l2 and (sample or cell) (8w) (lysis or lytic or lys? or disrupt? or break? or
rupt? or sonicate)
L3       12023 L2 AND (SAMPLE OR CELL) (8W) (LYSIS OR LYTIC OR LYS? OR DISRUPT?
               OR BREAK? OR RUPT? OR SONICATE)

=> s l2 and (lysis or lytic or lys? or disrupt? or break? or rupt? or sonicate)
L4      165046 L2 AND (LYSIS OR LYTIC OR LYS? OR DISRUPT? OR BREAK? OR RUPT?
               OR SONICATE)

=> s l4 and (drop? or microdrop?) (8w) (prepar? or synth? or dispens?)
L5          57 L4 AND (DROP? OR MICRODROP?) (8W) (PREPAR? OR SYNTH? OR DISPENS
               ?)

=> s l4 and mix? or stir? or agitat?
L6      480485 L4 AND MIX? OR STIR? OR AGITAT?

=> s l5 and mix? or stir? or agitat?
L7      462990 L5 AND MIX? OR STIR? OR AGITAT?

=> s l4 and (mix? or stir? or agitat?)
L8       21033 L4 AND (MIX? OR STIR? OR AGITAT?)
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=> s l4 and (mix? or stir? or agitat?) (s) reagent (s) sample
MISSING TERM AFTER REAGENT (S
Operators must be followed by a search term, L-number, or query name.

=> s l4 and (mix? or stir? or agitat?) (8w) sample (8w) reagent
L9           6 L4 AND (MIX? OR STIR? OR AGITAT?) (8W) SAMPLE (8W) REAGENT

=> s l4 and (mix? or stir? or agitat?) (8w) sample (s) reagent
L10         14 L4 AND (MIX? OR STIR? OR AGITAT?) (8W) SAMPLE (S) REAGENT

=> s l4 and (mix? or stir? or agitat?) (s) sample (s) reagent
L11         49 L4 AND (MIX? OR STIR? OR AGITAT?) (S) SAMPLE (S) REAGENT

=> s l11 and pcr or polymerase chain reaction
L12     138949 L11 AND PCR OR POLYMERASE CHAIN REACTION

=> s l11 and (pcr or (polymerase chain reaction))
L13          5 L11 AND (PCR OR (POLYMERASE CHAIN REACTION))

=> s l1 and (pcr or (polymerase chain reaction))
L14       3820 L1 AND (PCR OR (POLYMERASE CHAIN REACTION))

=> s l3 and (pcr or (polymerase chain reaction))
L15        345 L3 AND (PCR OR (POLYMERASE CHAIN REACTION))

=> s l1 and thermopneumatic (8w) actuat?
L16         49 L1 AND THERMOPNEUMATIC (8W) ACTUAT?

=> s l1 and therm? (8w) gas (8w) actuat?
   2 FILES SEARCHED...
L17          2 L1 AND THERM? (8W) GAS (8W) ACTUAT?

=> s l16 and resist? (8w) heater
L18          0 L16 AND RESIST? (8W) HEATER

=> s l1 and resist? (8w) heater
L19        242 L1 AND RESIST? (8W) HEATER

=> s l15 and resist? (8w) heater
L20          0 L15 AND RESIST? (8W) HEATER

=> s l1 and valve (p) filter (p) actuator
PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED 'VALVE (P) FILTER'
PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED 'FILTER (P) ACTUATOR'
PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED 'VALVE (P) FILTER'
PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED 'FILTER (P) ACTUATOR'
L21          9 L1 AND VALVE (P) FILTER (P) ACTUATOR

=> s l1 and valve (p) (filter or membrane) (p) actuator
PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED 'VALVE (P) '
PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED 'MEMBRANE) (P) ACTUATOR'
PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED 'VALVE (P) '
PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED 'MEMBRANE) (P) ACTUATOR'
L22        120 L1 AND VALVE (P) (FILTER OR MEMBRANE) (P) ACTUATOR
```

```
=> s l22 and (pcr or (polymerase chain reaction))
L23           4 L22 AND (PCR OR (POLYMERASE CHAIN REACTION))

=> s l1 and valve (p) (filter or membrane) (p) actuat?
PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED 'VALVE (P) '
PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED 'MEMBRANE) (P) ACTUAT?'
PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED 'VALVE (P) '
PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED 'MEMBRANE) (P) ACTUAT?'
L24         223 L1 AND VALVE (P) (FILTER OR MEMBRANE) (P) ACTUAT?

=> s l24 and (pcr or (polymerase chain reaction))
L25           5 L24 AND (PCR OR (POLYMERASE CHAIN REACTION))

=> s l11 and (dna or rna or deoxyribonucleic)
L26           6 L11 AND (DNA OR RNA OR DEOXYRIBONUCLEIC)

=> duplicate remove l11 1-49
'1-49' IS NOT VALID.  VALID FILE NAMES ARE 'COMPENDEX, INSPEC, CAPLUS'
You have entered a file name of duplicates to keep that is not
referenced by any of the L#s specified for this DUPLICATE command.
The file names of duplicates that can be kept are listed above.
Please enter one of these file names.
ENTER FILE NAMES OF DUPLICATES TO KEEP:caplus
PROCESSING COMPLETED FOR L11
L27           48 DUPLICATE REMOVE L11 CAPLUS  (1 DUPLICATE REMOVED)

=> s l27 and (channel or microchannel or chamber) (8w) network
L28           0 L27 AND (CHANNEL OR MICROCHANNEL OR CHAMBER) (8W) NETWORK

=> s l27 and (channel or microchannel or chamber)
L29           0 L27 AND (CHANNEL OR MICROCHANNEL OR CHAMBER)

=> s l1 and (channel or microchannel or chamber)
L30       36654 L1 AND (CHANNEL OR MICROCHANNEL OR CHAMBER)

=> s l27 and l30
L31           0 L27 AND L30

=> s l1 and point of care
L32         370 L1 AND POINT OF CARE

=> s l32 and l27
L33           0 L32 AND L27

=> s l32 and (channel or microchannel or chamber)
L34         108 L32 AND (CHANNEL OR MICROCHANNEL OR CHAMBER)

=> s l34 and dna
L35          29 L34 AND DNA

=> s l34 and (mix? or stir? or combin? or agitat?) (s) sample (s) reagent
L36           3 L34 AND (MIX? OR STIR? OR COMBIN? OR AGITAT?) (S) SAMPLE (S)
                REAGENT

=> s l34 and (mix? or stir? or combin? or agitat?)
L37          29 L34 AND (MIX? OR STIR? OR COMBIN? OR AGITAT?)
```

=> s l34 and (drop? or microdrop?) (8w) (prepar? or synth? or dispens?)
L38 2 L34 AND (DROP? OR MICRODROP?) (8W) (PREPAR? OR SYNTH? OR DISPEN S?)

=> s l34 and (lysis or lytic or lys? or disrupt? or break? or rupt? or sonicate)
L39 7 L34 AND (LYSIS OR LYTIC OR LYS? OR DISRUPT? OR BREAK? OR RUPT? OR SONICATE)

=> display l27 1-48 ibib abs

L27 ANSWER 1 OF 48 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2007:119155 CAPLUS
DOCUMENT NUMBER: 146:180313
TITLE: Normalization of complex analyte mixtures
INVENTOR(S): Takacs, Laszlo; Guttman, Andras; Kuras, Mariana
PATENT ASSIGNEE(S): Biosystems International SAS, Fr.
SOURCE: PCT Int. Appl., 25pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2007012982	A2	20070201	WO 2006-IB3161	20060727
WO 2007012982	A3	20070503		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AP, EA, EP, OA

PRIORITY APPLN. INFO.: US 2005-702860P P 20050728
US 2006-781001P P 20060311

AB The present invention relates to methods and compns. for the normalization of complex analyte mixts. The invention allows the preparation of profiled samples from highly complex analyte mixts., allowing the identification of relevant targets or biomarkers. The invention also relates to methods for producing devices, such as a support, suitable for normalization of complex analyte samples. The invention can be used for the normalization of any complex mixture, such as immunogenic libraries, particularly of human source, and to identify or produce biomarkers highly relevant to human traits or conditions. A complex analyte sample is normalized by contacting the sample with a binding composition comprising a polyclonal antibody generated against the complex analyte or a derivative thereof, under conditions that do not saturate the antigen-binding capacity of the binding composition, and recovering the sample that did not react with the binding composition as the normalized sample.

L27 ANSWER 2 OF 48 COMPENDEX COPYRIGHT 2007 EEI on STN DUPLICATE 1
ACCESSION NUMBER: 2007(6):8098 COMPENDEX
TITLE: Microfluidic systems for extracting nucleic acids for DNA and RNA analysis.
AUTHOR: Hui, Wing C. (Institute of Microelectronics, Singapore); Yobas, Levent; Samper, Victor D.; Heng,

Chew-Kiat; Liw, Saxon; Ji, Hongmiao; Chen, Yu; Cong, Lin; Li, Jing; Lim, Tit Meng

SOURCE: Sensors and Actuators, A: Physical v 133 n 2 SPEC. ISS. Feb 12 2007 2007.p 335-339

SOURCE: Sensors and Actuators, A: Physical v 133 n 2 SPEC. ISS. Feb 12 2007 2007.p 335-339

CODEN: SAAPEB ISSN: 0924-4247

PUBLICATION YEAR: 2007

DOCUMENT TYPE: Journal

TREATMENT CODE: Theoretical; Experimental

LANGUAGE: English

AN 2007(6):8098 COMPENDEX

AB This paper is to review the differences in the developments of microfluidic chips for extracting genomic deoxyribonucleic acid (DNA) and viral ribonucleic acid (RNA) from blood by the Biosensor Focus Interest Group (BFIG) in Singapore. DNA was extracted in a multi-step process by isolating and lysing white blood cells (WBC), typically [similar to]10 mum in diameter. Viral RNA was extracted directly from the submicron viruses in the blood. In terms of basic microfluidic components required, both DNA and RNA extractions used similar mixers for mixing reagents, filters for capturing or separating the blood cells, and a binder for capturing and purifying the DNA/RNA molecules. The designs of the filters were adapted to either capture WBC for DNA isolation or capture all virus particles for RNA isolation. The designs of these two kinds of filters had to be different. Besides the differences in the sizes of WBC and viruses, the concentration of the virus particles is usually much lower than WBC. Thus, a much higher volume of blood for filtering would be required for extracting viral RNA, especially for the intention to detect the viruses at early onset of infection. With proper modifications of the protocols, it has been demonstrated that both genomics DNA and viral RNA could be extracted successfully in these microfluidic chips. The quality of the extracted samples was verified by polymerase chain reaction (PCR) and gel-electrophoresis after the extractions. $CPY 2006 Elsevier B.V. All rights reserved. 9 Refs.

L27 ANSWER 3 OF 48 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2006:632725 CAPLUS

DOCUMENT NUMBER: 145:79252

TITLE: HDL cholesterol assay, reagent mixture, and kit

INVENTOR(S): Roblin, Patricia Mary Elizabeth; Broughall, John Morton; Wong, Luet Lok

PATENT ASSIGNEE(S): Oxford Biosensors Limited, UK

SOURCE: PCT Int. Appl., 46 pp.
CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2006067424	A1	20060629	WO 2005-GB4952	20051221

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ,

CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

PRIORITY APPLN. INFO.: GB 2004-28130 A 20041222

AB A method for the determination of the amount of cholesterol in high d. lipoproteins in a high d. lipoprotein containing sample, said method comprises reacting the sample with a PEG-ylated protein to selectively complex non-HDL lipoproteins in the sample with said PEG-ylated protein, or with a PEG-ylated enzyme capable of selective reaction with high d. lipoproteins, and subsequently measuring the amount of cholesterol in the high d. lipoproteins, for example using an electrochem. technique. A reagent mixture and a kit for the assay comprise a PEG-ylated protein, a cholesterol ester hydrolyzing reagent, cholesterol oxidase or cholesterol dehydrogenase, and, optionally, a surfactant. The kit also contains means for measuring the amount of cholesterol reacting with the oxidase or dehydrogenase, such as an electrochem. sensor cell. An electrochem. cell, having a volume of 0.2 μL and a dried reagent mixt. containing ruthenium hexamine, NAD, putidaredoxin reductase, cholesterol dehydrogenase, PEG-modified lipoprotein lipase, Tris-HCl (pH 8), Tris pH 9 buffer, Emulgen B-66, Tris buffer with mannitol/magnesium chloride, myo-inositol, and phosphotungstic acid, was used in the anal. of plasma samples. The electrochem. results correlated well with results obtained using a com. available non-electrochem. test.

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 4 OF 48 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2006:541970 CAPLUS

DOCUMENT NUMBER: 145:3783

TITLE: Kit, method and apparatus for measuring microorganism in liquid sample by measuring intracellular ATP

INVENTOR(S): Tanaka, Kojiro

PATENT ASSIGNEE(S): Dml Co., Ltd., Japan

SOURCE: PCT Int. Appl., 38 pp.
CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2006059359	A1	20060608	WO 2004-JP17747	20041130
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
CN 1871338	A	20061129	CN 2004-80000984	20041130
US 2006263773	A1	20061123	US 2005-529854	20050331

PRIORITY APPLN. INFO.: WO 2004-JP17747 W 20041130

AB A kit/method/apparatus for measuring microorganism in a liquid sample is provided, which is capable of easily and rapidly performing the removal of free ATP, extraction of ATP from trapped microorganism, and measurement of extracted ATP, and thereby, stably measuring microorganism in a sample with

high sensitivity while ensuring less loss of microorganism without requiring a skill. The method comprises sucking a flocculant into a first syringe beforehand, sucking a liquid sample into the first syringe and stirring it, immediately mounting a primary filter case and a secondary filter case onto a tip of the first syringe, filtering a mixt. liquid in the first syringe, detaching only the secondary filter case, washing the secondary filter case with a washing liquid sucked into a second syringe beforehand, filling the inside of the secondary filter case with a bacteriolytic agent, allowing it to react with microorganism for ca. 30 s, pushing out a reaction liquid into a measurement tube, adding a luminescent reagent prepared beforehand, attaching an adaptor and lightly stirring the mixt., and immediately, measuring the luminescent intensity with a luminometer. Diagrams describing the kit/apparatus assembly are given.

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 5 OF 48 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2006:1309529 CAPLUS
DOCUMENT NUMBER: 146:56463
TITLE: Bio-briefcase system using immunological analysis and PCR for detection of biological pathogens
INVENTOR(S): Dzenitis, John M.; Benett, William J.; Mariella, Raymond P.; Visuri, Steven R.; Venkateswaran, Kodumudi S.
PATENT ASSIGNEE(S): The Regents of the University of California, USA
SOURCE: U.S. Pat. Appl. Publ., 10pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
US 2006281101	A1	20061214	US 2005-154975		20050615
PRIORITY APPLN. INFO.:			US 2005-654634P	P	20050217

AB The present invention provides a bio-briefcase system for analyzing a sample for the presence of biol. pathogens (e.g., biol. warfare agents). The bio-briefcase system comprises a housing, an immunoassay section operatively connected to the housing, and/or a nucleic acid assay section operatively connected to the housing. The nucleic acid assay section includes: a lysis section for lysing the sample, a DNA-capture pillar chip section that concs. and filters DNA from the sample, a PCR section to perform PCR amplification, an avidin section for mixing the sample with avidin to scavenge electrophoretic mobility tags (eTags), a capillary electrophoresis section and microfluidics. The immunoassay section includes: an antibody coupling section, photoactivation section that exposes the sample to light, an antibody reagent section, a scavenge bound eTags section for moving and mixing the sample to scavenge eTags, a capillary electrophoresis section and microfluidics.

L27 ANSWER 6 OF 48 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2006:1029447 CAPLUS
DOCUMENT NUMBER: 145:391931
TITLE: ATP assay kit/method/apparatus for measuring microorganism in liquid sample
INVENTOR(S): Tanaka, Kojiro
PATENT ASSIGNEE(S): DML K. K., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 38pp.

CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2006262891	A	20061005	JP 2005-342116	20051128
PRIORITY APPLN. INFO.:			JP 2006-520517 A	20041130

AB An ATP assay kit/method/apparatus for measuring microorganism in a liquid sample is provided, which enables to easily and rapidly perform the removal of free ATP, extraction of ATP from trapped microorganism, and measurement of extracted ATP with less loss of microorganism without requiring a skill, and stably measure the microorganism in the sample with high sensitivity. The microorganism measuring method comprises: sucking a flocculant into a first syringe beforehand; sucking a liquid sample and mixing it; immediately attached a primary filter case and a secondary filter case to a tip of the syringe; filtering a mixt. liquid and removing only the secondary filter case; washing the secondary filter case using a second syringe into which a washing liquid has been sucked beforehand, filling the inside of the secondary filter case with a lysis agent; allowing it to react with microorganism for ca. 30 s; pushing out a reaction liquid into a measurement tube; adding a luminescence reagent prepared beforehand to the reaction liquid; attaching an adaptor to the tube, and lightly mixing the reaction liquid lightly; and immediately measuring the luminescence quantity with a luminometer. Diagrams describing the kit assembly are given.

L27 ANSWER 7 OF 48 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2006:730482 CAPLUS
DOCUMENT NUMBER: 145:162687
TITLE: Method and reagent for classifying leukocytes in animal blood
INVENTOR(S): Matsumoto, Hideaki; Shiraishi, Junichi; Hirayama, Hideki
PATENT ASSIGNEE(S): Sysmex Corporation, Japan
SOURCE: Eur. Pat. Appl., 26 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1684075	A2	20060726	EP 2006-447013	20060123
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, BA, HR, IS, YU				
JP 2006226996	A	20060831	JP 2006-5479	20060113
US 2006166366	A1	20060727	US 2006-333200	20060118
CN 1811417	A	20060802	CN 2006-10006046	20060124
PRIORITY APPLN. INFO.:			JP 2005-16035 A	20050124

AB A method for classifying leukocytes in animal blood is described. In the method, a measurement sample is prepared by mixing a canine or feline blood sample with a lysing reagent. Erythrocytes are lysed and leukocytes are shrunk in the measurement sample. The data correlated with the size of leukocytes in the measurement sample are measured. The leukocytes, on the

basis of the measured data, are classified into a first group containing lymphocytes, a second group containing neutrophils and monocytes and a third group containing eosinophils.

L27 ANSWER 8 OF 48 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2006:186599 CAPLUS
DOCUMENT NUMBER: 144:426360
TITLE: Label-Free Microelectronic PCR Quantification
AUTHOR(S): Hou, Chih-Sheng Johnson; Milovic, Nebojsa; Godin, Michel; Russo, Peter R.; Chakrabarti, Raj; Manalis, Scott R.
CORPORATE SOURCE: Department of Electrical Engineering and Computer Science Biological Engineering Division Department of Chemistry and Department of Mechanical Engineering, Massachusetts Institute of Technology, Cambridge, MA, 02139, USA
SOURCE: Analytical Chemistry (2006), 78(8), 2526-2531
CODEN: ANCHAM; ISSN: 0003-2700
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB We present a robust and simple method for direct, label-free PCR product quantification using an integrated microelectronic sensor. The field-effect sensor can sequentially detect the intrinsic charge of multiple unprocessed PCR products and does not require sample processing or addnl. reagents in the PCR mixt. The sensor measures nucleic acid concn. in the PCR relevant range and specifically detects the PCR products over reagents such as Taq polymerase and nucleotide monomers. The sensor can monitor the product concn. at various stages of PCR and can generate a readout that resembles that of a real-time fluorescent measurement using an intercalating dye but without its potential inhibition artifacts. The device is mass-produced using standard semiconductor processes, can be reused for months, and integrates all sensing components directly on-chip. As such, our approach establishes a foundation for the direct integration of PCR-based in vitro biotechnologies with microelectronics.
REFERENCE COUNT: 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 9 OF 48 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2006:662013 CAPLUS
DOCUMENT NUMBER: 145:61763
TITLE: Papain-induced gelation of soy glycinin (11S)
AUTHOR(S): Zhong, Fang; Yang, Xin; Li, Yue; Shoemaker, Charles F.
CORPORATE SOURCE: School of Food Science and Technology, Southern Yangtze Univ., Wuxi, Peop. Rep. China
SOURCE: Journal of Food Science (2006), 71(5), E232-E237
CODEN: JFDSAZ; ISSN: 0022-1147
PUBLISHER: Institute of Food Technologists
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The gelation of soy peptides produced by the action of papain enzymes on soy glycinin (11S) dispersions (4.7% w/v) was investigated. Cation-exchange chromatog. was used to fractionate crude papain. The nonbinding fraction showed no gel-forming activity on the 11S dispersion. Two binding fractions showed gel-forming activity, and the gel strength of both 11S gels was similar. The activity of the crude papain on 11S dispersions produced a slightly stronger gel than one formed with either of the 2 binding fractions. With the crude papain, the rate of gel formation appeared to be strongly influenced by the enzyme concn ., but the maximum gel strength was independent of enzyme concn. When the temperature was increased, the papain treatment of 11S soy protein

produced weaker gels when the measurement was made at the temperature of formation. This dependence of maximum gel strength on temperature was found to be a function of only the measurement temperature and not the gel formation temperature The degree of protein hydrolysis at maximum gel strength was similar (.apprx.6%) for the gels formed at different temps. When the temperature was increased, the elastic modulus G', the viscous modulus G'', and the degree of viscoelasticity (G''/G') decreased. This suggested that the gels were formed the by hydrophobic interactions among the peptides. This observation was supported by particle size measurements on samples of gels which were mixed with reagents known for their ability to disrupt hydrophilic/electrostatic, hydrophobic, or disulfide interactions.

REFERENCE COUNT: 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 10 OF 48 COMPENDEX COPYRIGHT 2007 EEI on STN

ACCESSION NUMBER: 2006(45):3794 COMPENDEX

TITLE: Identification and quantification of protein carbonylation using light and heavy isotope labeled Girard's P reagent.

AUTHOR: Mirzaei, Hamid (Department of Chemistry Purdue University, West Lafayette, IN 47907, United States); Regnier, Fred

SOURCE: Journal of Chromatography A v 1134 n 1-2 Nov 17 2006 2006.p 122-133

SOURCE: Journal of Chromatography A v 1134 n 1-2 Nov 17 2006 2006.p 122-133

CODEN: JCRAEY ISSN: 0021-9673

PUBLICATION YEAR: 2006

DOCUMENT TYPE: Journal

TREATMENT CODE: Theoretical; Experimental

LANGUAGE: English

AN 2006(45):3794 COMPENDEX

AB Protein carbonyls are one of the most widely studied markers of oxidative stress. Determining increases in the concentration of protein carbonyls known to be associated with neurodegenerative diseases, heart disease, cancer and ageing. Identification of carbonylation sites in oxidized proteins has been a challenge. Even though recent advances in proteomics has facilitate the identification of carbonylation sites in oxidized proteins, confident identification remains a challenge due to the complicated nature of oxidative damage and the wide range of oxidative modifications. Here, we report the development of a multiplexing strategy that facilitates confident carbonylated peptide identification through a combination of heavy and light isotope coding and a multi-step filtering process. This procedure involves (1) labeling aliquots of oxidized proteins with heavy and light forms of Girard's reagent P (GPR) and combining them in a 1:1 ratio along with (2) LC/MS and MALDI-MS/MS analysis. The filtering process uses LC/MS and MALDI-MS/MS data to rule out false positives by rejecting peptide doublets that do not appear with the correct concentration ratio, retention time, tag number, or resolution. This strategy was used for the identification of heavily oxidized transferrin peptides and resulted in identification 13 distinct peptides. The competency of the method was validated in a complex mixture using oxidized transferrin in a yeast lysate as well as oxidized yeast. Twenty-five percent of the peptides identified in a pure oxidized sample of transferrin were successfully identified from the complex mixture. Analysis of yeast proteome stressed with hydrogen peroxide using this multiplexing strategy resulted in identification of 41 carbonylated peptides from 36 distinct proteins.

Differential isotope coding of model peptides at different concentrations followed by mixing at different ratios was used to establish the linear dynamic range for quantification of carbonylated peptides using light and heavy forms of GPR. 29 Refs.

L27 ANSWER 11 OF 48 CAPLUS
ACCESSION NUMBER: 2005:36471 CAPLUS
DOCUMENT NUMBER: 142:87592
TITLE: A device for the collection of potentially dangerous environmental samples for analysis by PCR
INVENTOR(S): Green, Douglas Jason; Holmes, Carrie Lynn
PATENT ASSIGNEE(S): Smiths Detection-Edgewood, Inc., USA
SOURCE: U.S. Pat. Appl. Publ., 11 pp., Cont.-in-part of U.S. Ser. No. 727,037.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005009071	A1	20050113	US 2004-852684	20040525
US 2004214200	A1	20041028	US 2003-727037	20031204
AU 2004242961	A1	20041209	AU 2004-242961	20040527
CA 2527304	A1	20041209	CA 2004-2527304	20040527
WO 2004105949	A1	20041209	WO 2004-US16727	20040527
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP 1628770	A1	20060301	EP 2004-753544	20040527
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK				

PRIORITY APPLN. INFO.:

US 2002-430994P	P	20021204
US 2003-473539P	P	20030528
US 2003-727037	A2	20031204
US 2004-852684	A	20040525
WO 2004-US16727	W	20040527

AB A holder for PCR sample collection and preparation for use in the anal. of samples containing potentially hazardous materials, such as biol. warfare agents, is described. The apparatus has a sealed buffer container housing connected to a plunger housing. The two can be separated from one another as needed. A swab attached to an end of a plunger collects a sample of a specimen to be analyzed for biol. warfare agents. The swab and plunger are inserted into the plunger housing, a buffer container is positioned inside the buffer container housing and the buffer container housing and plunger housing are attached. The plunger breaks the seal on the buffer container and the buffer passes through the swab and elutes the sample and the sample mixes with a reagent. The prepared sample loads into a reaction tube, by a whipping action, for anal. The components of the apparatus have alignment tabs that ensure tight locking.

L27 ANSWER 12 OF 48 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:1181477 CAPLUS
DOCUMENT NUMBER: 144:388611
TITLE: A quantitative immunochromatography assay of whole blood samples for antigen-specific IgE - a new method for point of care testing for allergens
AUTHOR(S): Ono, Tetsuya; Sugiyama, Kazuyuki; Kuroda, Takashi; Kawamura, Masahide; Arao, Shisuke; Nariuchi, Hideo
CORPORATE SOURCE: Research & Development Department, Mitsubishi Kagaku Iatron, Inc., Chiba, Japan
SOURCE: Allergology International (2005), 54(3), 393-399
CODEN: ALINFR; ISSN: 1323-8930
PUBLISHER: Japanese Society of Allergology
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Background: The development of an inexpensive point-of-care testing system for antigen-specific IgE is greatly needed. We, therefore, tried to develop a quant. enzyme immunochromatog. assay system for antigen-specific IgE in fresh whole blood. Methods: Whole blood sample was mixed with a reagent containing detergent to lyse red blood cells, and the mixt. was applied to an immunochromatog. strip. The lysate was observed to migrate in the strip and was washed away by the substrate buffer. When the sample contained the specific IgE, the antigen-specific IgE line was clearly observed on the strip macroscopically. Results: Results were obtained 20 min after the application of hemolyzed blood sample to immunochromatog., and these results showed pos. correlation with those obtained by the AlaSTAT system, which is one of the popular assay kits for specific IgE. The results were not affected significantly by the hematocrit value of the blood sample, by the kind of anticoagulant in the blood collection tube, or by the concn. of the total IgE, provided it was lower than 20000 IU/mL. Conclusions: These results indicate that our system is applicable for point-of-care testing for antigen-specific IgE.
REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 13 OF 48 COMPENDEX COPYRIGHT 2007 EEI on STN
ACCESSION NUMBER: 2005(26):2159 COMPENDEX
TITLE: Amino acids determination using capillary electrophoresis with on-capillary derivatization and laser-induced fluorescence detection.
AUTHOR: Veledo, Maria Teresa (Institute of Organic Chemistry (C.S.I.C.), 28006 Madrid, Spain); De Frutos, Mercedes; Diez-Masa, Jose Carlos
SOURCE: Journal of Chromatography A v 1079 n 1-2 SPEC. ISS. Jun 24 2005 2005.p 335-343
SOURCE: Journal of Chromatography A v 1079 n 1-2 SPEC. ISS. Jun 24 2005 2005.p 335-343
CODEN: JCRAEY ISSN: 0021-9673
PUBLICATION YEAR: 2005
DOCUMENT TYPE: Journal
TREATMENT CODE: Experimental
LANGUAGE: English
AN 2005(26):2159 COMPENDEX
AB Free amino acids have been derivatized on-capillary with 3-(2-furoyl)quinoline-2-carboxaldehyde (FQ) and analyzed using a laboratory-made capillary electrophoresis apparatus with laser-induced fluorescence detection. Several parameters that control on-capillary derivatization of amino acids, including pH, mixing time, reaction time, concentration of the derivatization reagents (potassium cyanide and FQ) and solvent of FQ, as well as the temperature of mixing and reaction were optimized.

Repeatabilities better than 1.8% for migration time and 7.8% for peak height were obtained. Assay detection limits for the different amino acids ranged from 23 nM for glycine to 50 nM for lysine and glutamic acid. The methods developed were applied to the analysis of several amino acids in pharmaceutical preparations and plasma samples. Results showed a good agreement with those obtained using an amino acid autoanalyzer for the same samples. $CPY 2005 Elsevier B.V. All rights reserved. 38 Refs.

L27 ANSWER 14 OF 48 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:539894 CAPLUS
DOCUMENT NUMBER: 141:85161
TITLE: A cyanide-free reagent for measuring haemoglobin in blood and a method for measuring haemoglobin
INVENTOR(S): Walsh, James; O'Caoimh, Ronan Patrick; Farrell, Brendan Kevin; D'Arcy, Marie
PATENT ASSIGNEE(S): Trinity Research Limited, Ire.
SOURCE: Brit. UK Pat. Appl., 21 pp.
CODEN: BAXXDU
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 2396913	A	20040707	GB 2003-27866	20031202
PRIORITY APPLN. INFO.:			IE 2002-936 A	20021203

AB This article discloses a cyanide-free reagent and method for stabilizing and measuring the total Hb concn. in a blood sample. The reagent contains a surfactant capable of lysing erythrocytes and releasing Hb and a compound in a sufficient amount capable of oxidizing Hb and its derivs. to metHb and forming a stable chromogen for Hb concn . measurement. This compound is selected from the group consisting of nitrite and nitrate salts. The reagent is mixed with a blood sample and the optical d. of the chromogen formed is measured at the corresponding absorption wavelength.
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 15 OF 48 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:936416 CAPLUS
DOCUMENT NUMBER: 142:351380
TITLE: A droplet-based protein crystallization device using electrostatic micromanipulation
AUTHOR(S): Hirano, Masaaki; Torii, Toru; Higuchi, Toshiro; Yamazaki, Hiroki
CORPORATE SOURCE: Department of Precision Engineering, Graduate School of Engineering, The University of Tokyo, Bunkyo-ku, Tokyo, 113-8656, Japan
SOURCE: Special Publication - Royal Society of Chemistry (2004), 297(Micro Total Analysis Systems 2004, Volume 2), 148-150
CODEN: SROCDO; ISSN: 0260-6291
PUBLISHER: Royal Society of Chemistry
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A novel device for high throughput screening of protein crystallization is proposed. Nanoliter-sized droplets of samples/reagents for protein crystallization were transported by electrostatic forces and mixed together on an elec. panel device. The preparation process can be automated, and various conditions (concn./pH) can be produced

precisely and flexibly by controlling the volume of the combining droplets. By combining the droplets, crystals of lysozyme and thaumatin were obtained.

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 16 OF 48 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2003:118103 CAPLUS
DOCUMENT NUMBER: 138:149962
TITLE: Lytic reagent composition for determination of nucleated red blood cells
INVENTOR(S): Li, Yi; Li, Jing
PATENT ASSIGNEE(S): Coulter International Corp., USA
SOURCE: PCT Int. Appl., 41 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003012426	A1	20030213	WO 2002-US22414	20020715
W: JP				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR				
US 2003040115	A1	20030227	US 2001-917530	20010727
US 6573102	B2	20030603		
EP 1419381	A1	20040519	EP 2002-747023	20020715
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR, BG, CZ, EE, SK				
JP 2004537725	T	20041216	JP 2003-517569	20020715
PRIORITY APPLN. INFO.:			US 2001-917530 A	20010727
			WO 2002-US22414 W	20020715

OTHER SOURCE(S): MARPAT 138:149962

AB A lytic reagent composition for measuring nucleated blood cells in a blood sample is described. The lytic reagent composition comprises a quaternary ammonium surfactant, an ethoxylated phenol, and an ethoxylated alc. When mixed with a blood sample, the lytic reagent composition lyses red blood cells and enables a differentiation of nucleated red blood cells from other cell types by DC impedance measurement. The lytic reagent composition can further comprise an organic ligand for determining total Hb concn. of a blood sample photometrically. Further disclosed is a lytic reagent system including the lytic reagent composition and a diluent. In addition, a single reagent composition containing salts is also disclosed, which can be used without a sep. diluent. The lytic reagent compns. can be used for concurrent measurement of nucleated red blood cells, WBC, and Hb of a blood sample.

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 17 OF 48 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2003:892044 CAPLUS
DOCUMENT NUMBER: 139:347004
TITLE: Apparatus for measuring concentration of endotoxins in body fluid
INVENTOR(S): Ishii, Kiyoshi; Harada, Tokuzo; Miura, Kaoru
PATENT ASSIGNEE(S): Daisen Membrane Systems Co., Ltd., Japan; Central Filter Kogyo K. K.
SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.

CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003322655	A	20031114	JP 2002-130811	20020502
JP 3814559	B2	20060830		

PRIORITY APPLN. INFO.: JP 2002-130811 20020502

AB An apparatus for measuring concn. of endotoxins present in medical solns. such as injection, transfusion, and blood dialysis solns. is presented. The anal. method involves a step for injecting a test sample into the measuring pathway, a step for circulating the sample, mixing with the Limulus reagent, a step for measuring the concn. of turbidity in the sample mixt. in times, continuously, and a step for ejecting the mixt. The time required for the solution to reach a set turbidity concn. or the amount of the turbidity changing with time are correlated with the amount of endotoxins present.

L27 ANSWER 18 OF 48 COMPENDEX COPYRIGHT 2007 EEI on STN
ACCESSION NUMBER: 2003(49):2680 COMPENDEX
TITLE: CE/Electrospray Ionization-MS Analysis of Underivatized D/L-Amino Acids and Several Small Neurotransmitters at Attomole Levels through the Use of 18-Crown-6-tetracarboxylic Acid as a Complexation Reagent/Background Electrolyte.
AUTHOR: Moini, Mehdi (Dept. of Chemistry and Biochemistry University of Texas, Austin, TX 78712, United States); Schultz, Casey L.; Mahmood, Haniya
SOURCE: Analytical Chemistry v 75 n 22 Nov 15 2003 2003.p 6282-6287
SOURCE: Analytical Chemistry v 75 n 22 Nov 15 2003 2003.p 6282-6287
CODEN: ANCHAM ISSN: 0003-2700
PUBLICATION YEAR: 2003
DOCUMENT TYPE: Journal
TREATMENT CODE: Experimental
LANGUAGE: English
AN 2003(49):2680 COMPENDEX
AB A new capillary electrophoresis/mass spectrometry technique is introduced for attomole detection of primary amines (including several neurotransmitters), amino acids, and their D/L enantiomers in one run through the use of a complexation reagent while using only [similar to]1 nL of sample. The technique uses underivatized amino acids in conjunction with an underivatized capillary, which significantly reduces cost and analysis time. It was found that when (+)-(18-crown-6)-2,3,11,12-tetracarboxylic acid (18-C-6-TCA, MW 440) was used as the background electrolyte/complexation reagent during the capillary electrophoresis/electrospray ionization-mass spectrometry (CE/ESI-MS) analysis of underivatized amino acids, stable complexes were formed between the amino acids and the 18-C-6-TCA molecules. These complexes, which exhibited high ionization efficiencies, were detectable at attomole levels for most amino acids. The detection limits of the AA/18-C-6-TCA complexes were on the average more than 2 orders of magnitude lower than that of the free amino acids in solution. In addition to lower detection limits under CE/ESI-MS, a solution of 18-C-6-TCA in the concentration range of 5-30 mM provided high separation efficiency for mixtures of L-amino acids as well as mixtures of D/L-amino acids. By using a solution of 18-C-6-TCA as the background

electrolyte in conjunction with an underivatized, 130-cm-long, 20-mum-i.d., 150-mum-o.d. fused-silica capillary and by monitoring the m/z range of the amino acid/18-C-6-TCA complexes (m/z 515-700), most of the standard amino acids and many of their enantiomers were separated and detected with high separation efficiency and high sensitivity (nanomolar concentration detection limits) in one run. The solutions of 18-C-6-TCA also worked well as the CE/ESI-MS BGE for low-level detection of several neurotransmitters and some of their D/L enantiomers as well as for the analysis of amino acids at endogenous levels in lysed red blood cells. 21 Refs.

L27 ANSWER 19 OF 48 COMPENDEX COPYRIGHT 2007 EEI on STN
ACCESSION NUMBER: 2003(42):5522 COMPENDEX
TITLE: Processability and chemical resistance of the polymer blend of thermoplastic polyurethane and polydimethylsiloxane.
AUTHOR: Damrongsakkul, Siriporn (Department of Chemical Engineering Faculty of Engineering Chulalongkorn University, Bangkok 10330, Thailand); Sinweeruthai, Ratirat; Higgins, Julia S.
SOURCE: Macromolecular Symposia v 197 n 1 August 2003 2003.p 411-419
SOURCE: Macromolecular Symposia v 197 n 1 August 2003 2003.p 411-419
CODEN: MSYMEC ISSN: 1022-1360
PUBLICATION YEAR: 2003
DOCUMENT TYPE: Journal
TREATMENT CODE: Theoretical; Experimental
LANGUAGE: English
AN 2003(42):5522 COMPENDEX
AB This work is aimed to develop the melt blend of thermoplastic polyurethane (TPU) and polydimethylsiloxane (PDMS) and to study the effect of the chemical resistance on the tensile properties and morphology of the blends. The master batch blends at 2% of PDMS with 98% of TPU were firstly prepared by an internal mixer and then the blends of TPU/PDMS were prepared by melt mixing using a twin screw extruder. The maximum PDMS content that can be mixed with TPU was found to be no higher than 1%. Higher PDMS content leaves an unmelted TPU fraction in the blends due to the short residence time in the twin screw extruder. The resultant blends show an increase in the elongation at break up to 30% and in Young's modulus up to 40% at the optimum PDMS concentration of around 0.6%-0.8%, beyond which these properties diminish. The ultimate tensile strength and the energy to break are decreased by about 20% and 10%, respectively. The Scanning Electron Micrographs of the blends show dispersed phases of PDMS in a TPU matrix. The domain size of the PDMS phase becomes smaller when increasing PDMS content from 0.2% to 0.8%. The morphology of the fractured surface of TPU/PDMS blends shows less fibrous characteristics with increasing PDMS content in the blends. For the study of the effects of chemical resistance on the tensile properties and morphology of TPU/PDMS blends, two chemical reagents, sulfuric acid (H2SO4, 3% v/v) and sodium hydroxide (NaOH, 10% w/v) are selected. The results on the relationship of chemical resistance to tensile properties and morphology of the blends show that NaOH solution has a stronger effect on the tensile properties and morphology of virgin TPU and the blends than H2O4 solution. The ultimate tensile strength and the energy to break of virgin TPU after base immersion was found to be strongly decreased, which could be caused by the base hydrolysis of the polyester soft segment of polyurethane. The effect of PDMS content in the blends on the base resistance and tensile properties is similar to results before immersion, i.e. the effective PDMS content in the blends that can generally improve tensile properties of the blends after immersion in NaOH does not exceed 0.8%. The results are in

agreement with the weight loss of TPU/PDMS blends after base immersion and the morphology of the fractured surface of TPU/PDMS blends after base immersion that exhibit very small amounts of a fibrous character. There are also some small particles detached at the surface. This could be the result of an occurrence of a corrosive reaction between the sample surface and NaOH solution. 12 Refs.

L27 ANSWER 20 OF 48 INSPEC (C) 2007 IET on STN
ACCESSION NUMBER: 2004:7992356 INSPEC
DOCUMENT NUMBER: A2004-14-8160-035
TITLE: Processability and chemical resistance of the polymer of thermoplastic polyurethane and polydimethylsiloxane
AUTHOR: Damrongskkul, S.; Sinweeruthai, R.; (Dept. of Chem. Eng., Chulalongkorn Univ., Bangkok, Thailand), Higgins, J.S.
SOURCE: 7th European Symposium on Polymer Blends, Aug. 2003, p. 411-19 of 482 pp., 12 refs.
Editor(s): Pascault, J-P
ISBN: 3 527 30702 8
Published by: Wiley-VCH, Weinheim, Germany
Conference: 7th European Symposium on Polymer Blends, Lyon-Villeurbanne, France, 27-29 May 2002
DOCUMENT TYPE: Conference; Conference Article
TREATMENT CODE: Experimental
COUNTRY: Germany
LANGUAGE: English
AN 2004:7992356 INSPEC DN A2004-14-8160-035
AB This work is aimed to develop the melt blend of thermoplastic polyurethane (TPU) and polydimethylsiloxane (PDMS) and to study the effect of the chemical resistance on the tensile properties and morphology of the blends. The master batch blends at 2% of PDMS with 98% of TPU were firstly prepared by an internal mixer and then the blends of TPU/PDMS were prepared by melt mixing using a twin screw extruder. The maximum PDMS content that can be mixed with TPU was found to be no higher than 1%. Higher PDMS content leaves an unmelted TPU fraction in the blends due to the short residence time in the twin screw extruder. The resultant blends show an increase in the elongation at break up to 30% and in Young's modulus up to 40% at the optimum PDMS concentration of around 0.6%-0.8%, beyond which these properties diminish. The ultimate tensile strength and the energy to break are decreased by about 20% and 10%, respectively. The Scanning Electron Micrographs of the blends show dispersed phases of PDMS in a TPU matrix. The domain size of the PDMS phase becomes smaller when increasing PDMS content from 0.2% to 0.8%. The morphology of the fractured surface of TPU/PDMS blends shows less fibrous characteristics with increasing PDMS content in the blends. For the study of the effects of chemical resistance on the tensile properties and morphology of TPU/PDMS blends, two chemical reagents, sulfuric acid (H2SO-I, 3% v/v) and sodium hydroxide (NaOH, 10% w/v) are selected. The results on the relationship of chemical resistance to tensile properties and morphology of the blends show that NaOH solution has a stronger effect on the tensile properties and morphology of virgin TPU and the blends than H2SO4 solution. The ultimate tensile strength and the energy to break of virgin TPU after base immersion was found to be strongly decreased, which could be caused by the base hydrolysis of the polyester soft segment of polyurethane. The effect of PDMS content in the blends on the base resistance and tensile properties is similar to results before immersion, i.e. the effective PDMS content in the blends that can generally improve tensile properties of the blends after immersion in NaOH does not exceed 0.8%. The results are in agreement with the weight loss of TPU/PDMS blends after base immersion and the morphology of the fractured surface of TPU/PDMS blends after base

immersion that exhibit very small amounts of a fibrous character. There are also some small particles detached at the surface. This could be the result of an occurrence of a corrosive reaction between the sample surface and NaOH solution

L27 ANSWER 21 OF 48 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:90321 CAPLUS
DOCUMENT NUMBER: 136:131200
TITLE: Reagent delivery device and method of use
INVENTOR(S): Chu, Albert E.
PATENT ASSIGNEE(S): EY Laboratories, Inc., USA
SOURCE: PCT Int. Appl., 18 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002008727	A1	20020131	WO 2001-US22479	20010717
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 6632681	B1	20031014	US 2000-624261	20000724
CA 2416886	A1	20020131	CA 2001-2416886	20010717
CA 2416886	C	20070515		
EP 1320739	A1	20030625	EP 2001-984347	20010717
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2004508541	T	20040318	JP 2002-514370	20010717
PRIORITY APPLN. INFO.:			US 2000-624261 A	20000724
			WO 2001-US22479 W	20010717

AB A reagent delivery device includes a reservoir body with a flexible side wall and a cap which holds a reagent-containing matrix and a filter. Sample is placed in the reservoir body and the cap is attached. The flexible side wall is compressed, rupturing a vessel to mix the contents with the sample. The mixt. is filtered by the filter and reagent diffuses from the reagent matrix to form a reagent-sample mixt.

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 22 OF 48 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:863887 CAPLUS
DOCUMENT NUMBER: 139:97553
TITLE: An enzymatic assay for lysophosphatidylcholine concentration in human serum and plasma
AUTHOR(S): Kishimoto, Tatsuya; Soda, Yasuji; Matsuyama, Yoshiko; Mizuno, Koji
CORPORATE SOURCE: Diagnostic Research and Development Dept., R and D Division, Nesco Company, Azwell Inc., Osaka, Japan
SOURCE: Clinical Biochemistry (2002), 35(5), 411-416
CODEN: CLBIAS; ISSN: 0009-9120
PUBLISHER: Elsevier Science Inc.

DOCUMENT TYPE: Journal
LANGUAGE: English
AB Objectives: Several methods for measuring lysophosphatidylcholine (LPC) concns. have been reported. However, these methods are not practical because they are either too complicated and/or too time-consuming for LPC detns. in human serum and plasma. Design and Methods: The authors have developed a new enzymic LPC assay, which uses lysophospholipase, glycerophosphorylcholine phosphodiesterase and choline oxidase, and which dets. the quantities of hydrogen peroxide generated in the presence of peroxidase using an oxidative chromogenic reagent and 4-aminoantipyrine. Results: Various samples were mixed with LPC assay reagents, and their changes in absorbance were measured. The present method produced a linear calibration line between LPC concn. and absorbance change. It also measured only LPC, and not other phospholipids such as phosphatidylcholine, sphingomyelin and lysophosphatidic acid. The within-run and between-run coeffs. of variation were 0.3-0.7% and 0.7%, resp. The recovery of exogenous LPC added to control serum was 99.5-102.1%. The correlation coefficient obtained in a comparison with a method for analyzing fatty acids was 0.9122. Conclusions: The present method is simple, specific for LPC, and can be applied with an automatic analyzer. It may also be useful for further studies of the biol. functions of LPC as well as clin. applications in various disorders.
REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 23 OF 48 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:92142 CAPLUS
DOCUMENT NUMBER: 136:259507
TITLE: Urinary glycosaminoglycan excretion quantified by an automated semimicro method in specimens conveniently transported from around the globe
AUTHOR(S): Whitley, Chester B.; Spielmann, Richard C.; Herro, Gerrard; Teragawa, Suzanne Severson
CORPORATE SOURCE: Gene Therapy Center, Department of Pediatrics and Institute of Human Genetics, University of Minnesota Medical School, Minneapolis, MN, 55455, USA
SOURCE: Molecular Genetics and Metabolism (2002), 75(1), 56-64
CODEN: MGMEFF; ISSN: 1096-7192
PUBLISHER: Academic Press
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Current and future treatments for children with mucopolysaccharidosis (MPS) diseases require early, presymptomatic diagnosis, yet existing diagnostic methods to quantitate urinary glycosaminoglycan (GAG) are labor-intensive, and thus not applicable for newborn screening. Direct and rapid quantification of GAG excretion with 1,9-dimethylmethylene blue (DMB) is applicable to small vols. of urine collected, dried, and mailed on a paper matrix (MPS Test). To determine if this assay could be automated, a robotic instrument was programmed to accomplish the procedure; the pilot method simultaneously determined GAG and creatinine concns. in 10 patient specimens/run. Each analyte is measured in 4 dilns., thus increasing the operating range to cover a broad spectrum of normal and pathol. levels. Samples and reagents are mixed in a 96-well tray format in approx. 20 min, and densitometric measurements are recorded in less than 60 s. Optical d. measurements are electronically transmitted to a desktop computer to select optimal dilns., identify values above or below the level of reliability, make calcns., and print reports. This automated method was applied to 255 specimens from 101 subjects representing each of the MPS diseases-specifically, types I (n = 126); II (n = 47), III (n = 48), IV (n = 17), VI (n = 14) and VII (n = 3). This method discriminated pathol.

elevations of GAG excretion of MPS patients particularly when multiple specimens were available. Patients with non-MPS lysosomal diseases had normal GAG excretion, except for a patient with fucosidosis who had markedly elevated levels. Automation of the direct DMB method provides the key technol. necessary for newborn screening for MPS diseases. (c) 2002 Academic Press.

REFERENCE COUNT: 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 24 OF 48 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2001:54043 CAPLUS
DOCUMENT NUMBER: 134:204595
TITLE: Demonstration of a homogeneous noncompetitive immunoassay based on bioluminescence resonance energy transfer
AUTHOR(S): Arai, Ryoichi; Nakagawa, Hideyuki; Tsumoto, Kouhei; Mahoney, Walt; Kumagai, Izumi; Ueda, Hiroshi; Nagamune, Teruyuki
CORPORATE SOURCE: Department of Chemistry and Biotechnology, Graduate School of Engineering, University of Tokyo, Hongo, Bunkyo-ku, Tokyo, 113-8656, Japan
SOURCE: Analytical Biochemistry (2001), 289(1), 77-81
CODEN: ANBCA2; ISSN: 0003-2697
PUBLISHER: Academic Press
DOCUMENT TYPE: Journal
LANGUAGE: English

AB We describe a noncompetitive homogeneous bioluminescent immunoassay based on the antigen-dependent reassocn. of antibody variable domains (open sandwich bioluminescent immunoassay, OS-BLIA). The reassocn. of two chimeric proteins, an antibody heavy-chain fragment (VH)-Renilla luciferase (Rluc) and an antibody light-chain fragment (VL)-enhanced yellow fluorescent protein (EYFP), was monitored by a bioluminescence resonance energy transfer (BRET) between the two. Upon simple mixing of the reagents with the sample, an antigen-dependent increase in BRET was observed with a measurable concn. range of 0.1.apprx.10 μg/mL antigen hen egg lysozyme. Compared with our comparable assays based on fluorescence resonance energy transfer (FRET), a 10-fold improvement in the sensitivity was attained, probably due to a reduction in reagent concn. (c) 2001 Academic Press.

REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 25 OF 48 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2000:762640 CAPLUS
DOCUMENT NUMBER: 133:358682
TITLE: Micromachined separation chips with a precolumn reactor and end-column electrochemical detector
AUTHOR(S): Wang, Joseph; Chatrathi, Madhu Prakash; Tian, Baomin
CORPORATE SOURCE: Department of Chemistry and Biochemistry, ew Mexico State University, Las Cruces, NM, 88003, USA
SOURCE: Analytical Chemistry (2000), 72(23), 5774-5778
CODEN: ANCHAM; ISSN: 0003-2700
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Glass microchips, integrating chemical derivatization reactions, electrophoretic sepns., and amperometric detection, were developed. The performance of the new integrated microfabricated devices is demonstrated for rapid on-chip measurements of amino acids using precolumn reactions of amino acids with o-phthaldialdehyde/2-mercaptoethanol to generate electroactive derivs. that are separated electrophoretically and detected at

the end-column electrochem. detector. The influence of the sample /reagent mixing ratio, reagent concns., driving voltage, detection potential, and other variables is explored. The integrated microsystem offers a rapid (6 min) simultaneous measurements of eight amino acids, down to .apprx.2.5 + 10-6 M (5 fmol) level, with linearity up to the 2 + 10-4 M level examined, and good reproducibility (relative standard deviation = 2.2-2.7%). A step of the driving voltage was used for decreasing the migration time of late-eluting components and reducing the overall anal. time. The integrated microfabricated device expands the scope of on-chip electrochem. detection to nonelectroactive analytes and holds promise of being a powerful anal. tool.

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 26 OF 48 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1999:188942 CAPLUS
DOCUMENT NUMBER: 130:206980
TITLE: Cyanide-free erythrocyte-lytic reagent and method for hemoglobin and leukocyte analysis
INVENTOR(S): Li, Yi; Young, Carole
PATENT ASSIGNEE(S): Coulter International Corp., USA
SOURCE: U.S., 27 pp., Cont.-in-part of U.S. 5,763,280.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5882934	A	19990316	US 1998-47159	19980324
US 5763280	A	19980609	US 1997-786505	19970121
WO 9949318	A1	19990930	WO 1999-US5755	19990316
W: CN, JP				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
EP 1066529	A1	20010110	EP 1999-912593	19990316
R: DE, FR, GB				
JP 2002507749	T	20020312	JP 2000-538237	19990316

PRIORITY APPLN. INFO.:

US 1997-786505	A2	19970121
US 1998-47159	A	19980324
WO 1999-US5755	W	19990316

OTHER SOURCE(S): MARPAT 130:206980

AB A cyanide-free lytic reagent composition and method for measuring the total Hb concn. in a blood sample, for counting the number of leukocytes and for differential counting of leukocyte subpopulations are described. The cyanide-free lytic reagent composition contains (1) a quaternary ammonium salt or a pyridinium salt to lyse erythrocytes and release Hb, and (2) an organic ligand to form a stable chromogen with Hb (e.g., triazole and its derivs., tetrazole and its derivs., alkaline metal salts of oxonic acid, melamine, aniline-2-sulfonic acid, quinaldic acid, 2-amino-1,3,4-thiadiazole, triazine and its derivs., urazole, DL-pipecolinic acid, isonicotinamide, anthranilonitrile, 6-aza-2-thiothymine, 3-(2-thienyl)acrylic acid, benzoic acid and alkali metal and ammonium salts of benzoic acid, and pyrazine and its derivs.), and (3) a salt to adjust conductivity of the reagent for impedance measurement. The reagent composition is mixed with a blood sample without pre-dilution and the UV absorption of the sample mixt. is measured at the predetd. absorption wavelength. Counting the number of leukocytes and differential counting of leukocyte subpopulations are accomplished simultaneously on an automated

cell counter utilizing DC impedance measurement. A whole blood sample was mixed with a solution containing dodecyltrimethylammonium chloride, triazole, and sodium sulfate, pH 6.30. The absorption was measured immediately on a Beckman DU 7500 spectrophotometer. Another aliquot was analyzed by DC impedance on a hematol. analyzer to get the leukocyte subpopulation distribution histogram.

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 27 OF 48 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1998:672693 CAPLUS
DOCUMENT NUMBER: 129:272649
TITLE: Biomolecular processor for isolation and purification of nucleic acids
INVENTOR(S): Fields, Robert E.
PATENT ASSIGNEE(S): USA
SOURCE: PCT Int. Appl., 38 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9842874	A2	19981001	WO 1998-US6029	19980323
WO 9842874	A3	19981223		
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
AU 9867790	A	19981020	AU 1998-67790	19980323
EP 972080	A2	20000119	EP 1998-913175	19980323
EP 972080	B1	20050323		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
AT 291637	T	20050415	AT 1998-913175	19980323
US 2003027203	A1	20030206	US 2002-243521	20020912
PRIORITY APPLN. INFO.:			US 1997-41237P P	19970324
			WO 1998-US6029 W	19980323
			US 1999-381603 B1	19990922

AB A process and apparatus are described for isolating and purifying nucleic acids and other target mols. directly from blood, plasma, urine, cell cultures and the like by totally automated means, without centrifugation, aspiration or vacuum. After mixing and heating a nucleic acid containing sample with lysis reagent in an environmentally isolated compartment, nucleic acids are absorbed onto a binding filter and eluted in a small volume using heated elution reagent. A preferred embodiment purifies nucleic acids and automatically detects target sequences from a sample of fresh blood. Another embodiment purifies target mols. from a multitude of samples held in microtiter plates. Test kits for each embodiment include disposable isolation and detection devices and associated reagents.

L27 ANSWER 28 OF 48 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1998:728135 CAPLUS
DOCUMENT NUMBER: 129:310108

TITLE: Disposable sensor for metal analysis and method of using same
INVENTOR(S): Priddy, Richard Vernon; Schmidt, John Calvin; Studer, John Eugene, Jr.
PATENT ASSIGNEE(S): Environmental Technologies Group Inc, USA
SOURCE: U.S., 14 pp., Cont.-in-part of U.S. 5,554,268.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5830344	A	19981103	US 1996-677976	19960710
US 5554268	A	19960910	US 1995-392364	19950222
PRIORITY APPLN. INFO.:			US 1995-392364	A2 19950222

AB A disposable sensor for metal anal. comprises a housing including a 1st section, a 2nd section, and a flexible intermediate section therebetween. An ampul containing a reagent is disposed in the intermediate section. A liquid seal is formed between the 1st and 2nd sections. The intermediate section of the housing of the disposable sensor may be flexed to break the ampul. When the seal is broken between the 1st and 2nd sections, and the water (or any other liquid) sample mixes with the reagent, the mixt. flows into the 2nd section containing an electrode assembly. The electrode assembly may be disposed in engagement with the monitoring device to determine the concn. of the at least one metal in the water (or any other liquid) sample.
REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 29 OF 48 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1998:397739 CAPLUS
DOCUMENT NUMBER: 129:51714
TITLE: Cyanide-free lytic reagent composition and method for hemoglobin and leukocyte analysis
INVENTOR(S): Li, Yi; Young, Carole
PATENT ASSIGNEE(S): Coulter International Corp., USA
SOURCE: U.S., 26 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5763280	A	19980609	US 1997-786505	19970121
WO 9832016	A2	19980723	WO 1998-US515	19980113
WO 9832016	A3	19981203		
W: AU, CA, CN, JP				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
AU 9859134	A	19980807	AU 1998-59134	19980113
EP 960333	A2	19991201	EP 1998-902489	19980113
EP 960333	B1	20030709		
R: DE, FR, GB				
JP 2001509273	T	20010710	JP 1998-534457	19980113
EP 1298441	A2	20030402	EP 2002-28716	19980113
EP 1298441	A3	20040811		
R: DE, FR, GB				
US 5882934	A	19990316	US 1998-47159	19980324

PRIORITY APPLN. INFO.: US 1997-786505 A 19970121
EP 1998-902489 A3 19980113
WO 1998-US515 W 19980113

AB A cyanide-free lytic reagent composition and method for measuring the total Hb concn. in a blood sample, for counting the number of leukocytes and for differential counting of three leukocyte subpopulations including lymphocytes, monocytes, and granulocytes are described. The cyanide-free lytic reagent composition includes a hemolytic surfactant chosen from quaternary ammonium salts, pyridinium salts, organic phosphate esters, and alkylsulfonates to lyse erythrocytes and release Hb, and an organic ligand chosen from triazole and its derivs., tetrazole and its derivs., alkaline metal salts of oxonic acid, melamine, aniline-2-sulfonic acid, quinaldic acid, 2-amino-1,3,4-thiadiazole, triazine and its derivs., urazole, DL-pipecolic acid. isonicotinamide, anthranilonitrile, 6-aza-2-thiothymine, adenine, 3-(2-thienyl)acrylic acid, benzoic acid and alkali metal and ammonium salts of benzoic acid, and pyrazine and its derivs. to form a stable chromogen with Hb. The lytic reagent composition has a pH ranging from about 1 to about 13. The lytic reagent composition is mixed with a blood sample which is prediluted with a suitable blood diluent and the UV absorption of the sample mixt. is measured at the predetd. absorption wavelength of the formed chromogen from 510 nm to 560 nm. Counting the nos. of leukocytes and differential counting of three leukocyte subpopulations are accomplished simultaneously on an automated cell counter utilizing DC impedance measurement. Alternatively, the organic ligands can be added to a suitable blood diluent for Hb and leukocyte anal. Thus, a solution was prepared from tetrazole 5, tetradecyltrimethylammonium bromide 15 g and water to 1 L. The solution had a pH of 12.06 and gave excellent linear correlation with standard lytic agents.

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 30 OF 48 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1998:191332 CAPLUS
DOCUMENT NUMBER: 128:193981
TITLE: A comparative evaluation of continuous flow fast atom bombardment and ion spray ionization techniques for the simultaneous determination of alkyltrimethylammonium surfactants by mass spectrometry
AUTHOR(S): Coran, Silvia A.; Bambagiotti-Alberti, Massimo; Giannellini, Valerio; Moneti, Gloriano; Pieraccini, Giuseppe; Raffaelli, Andrea
CORPORATE SOURCE: Dipartimento Scienze Farmaceutiche, Universita di Firenze, Florence, 1-50121, Italy
SOURCE: Rapid Communications in Mass Spectrometry (1998), 12(6), 281-284
CODEN: RCMSEF; ISSN: 0951-4198
PUBLISHER: John Wiley & Sons Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB This study compares the performances of two mass-spectrometric ionization techniques, i.e. fast-atom bombardment (FAB) and ion-spray ionization (ISI), in the simultaneous quantitation of dodecyl-, tetradecyl- and hexadecyltrimethylammonium halides in aqueous media. Continuous-flow FAB and flow-injection anal. (FIA)-ISI, both in selected-ion monitoring and selected-reaction monitoring modes, were evaluated. Quantitation was performed by dilution with deuterium-labeled homologues synthesized by a simple procedure. A comparison of the data indicated FIA-ISI as the more sensitive (limit of detection = 10 ppb). Good linearity, precision and accuracy were obtained by the tested techniques in the concn.

range 0.125-4.0 ng μL-1. Hair softeners, com. surfactant mixts . and hematol. lysing reagents were used as test samples.
REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 31 OF 48 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1996:746544 CAPLUS
DOCUMENT NUMBER: 126:16502
TITLE: Lytic system utilizing propionic acid for leukocytes differentiation
INVENTOR(S): Lapicola, James D.; Becker, Janine D.; Carver, Franklin J.
PATENT ASSIGNEE(S): Hematronix, Inc., USA
SOURCE: PCT Int. Appl., 35 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9634283	A1	19961031	WO 1996-US5700	19960424
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
PRIORITY APPLN. INFO.:			US 1995-429934 A	19950427

AB A lytic reagent system for use in the differentiation of leukocyte subpopulations is provided. The lytic reagent system includes a diluent, a lytic reagent consisting essentially of propionic acid at a concn. sufficient to cause lysis of the erythrocyte fraction of the blood sample but leave substantially intact the leukocyte fraction for subsequent differentiation, a detergent at a concn. sufficient to promote clarification and proper sizing of the leukocyte subpopulations, and a quench comprising a mixt. of salt solution for neutralizing the system.

L27 ANSWER 32 OF 48 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1996:577878 CAPLUS
DOCUMENT NUMBER: 125:204032
TITLE: Disposable sensor for metal analysis
INVENTOR(S): Priddy, Richard V.; Schmidt, John C.; Studer, John E., Jr.
PATENT ASSIGNEE(S): USA
SOURCE: U.S., 13 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5554268	A	19960910	US 1995-392364	19950222
US 5830344	A	19981103	US 1996-677976	19960710
PRIORITY APPLN. INFO.:			US 1995-392364 A2	19950222

AB A disposable sensor for metal anal. comprises a housing including a 1st section, a 2nd section, and a flexible intermediate section there between. An ampul containing a reagent is disposed in the intermediate section. A liquid seal is formed between the 1st and 2nd sections. The intermediate section of the housing of the disposable sensor may be flexed to break

the ampul. When the seal is broken between the 1st and 2nd sections, and the water sample mixes with the reagent, the mixt. flows into the 2nd section containing an electrode assembly. The electrode assembly may be disposed in engagement with the monitoring device to determine the concn. of the at least one metal in the water sample.

L27 ANSWER 33 OF 48 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1993:517765 CAPLUS
DOCUMENT NUMBER: 119:117765
TITLE: Matrix effects in the derivatization of amino acids with naphthalene dicarboxyaldehyde, 9-fluorenylmethyl chloroformate and phenylisothiocyanate
AUTHOR(S): Lai, Fran; Sheehan, Terry
CORPORATE SOURCE: Varian Chromatogr. Syst., USA
SOURCE: BioTechniques (1993), 14(4), 642-4, 646, 648-9
CODEN: BTNQDO; ISSN: 0736-6205
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Pre-column derivatizations of amino acids often present two major challenges: 1) automation, due to the multi-step manipulations for pH control, reagent addition, mixing and extraction, and 2) effect of matrixes in the sample such as salts, buffers and surfactants. Both issues have been addressed in a previous publication on derivatization methods using 9-fluorenylmethyl chloroformate and phenylisothiocyanate. In this paper, a third method of derivatization was studied to address the same issues. The derivatization reagent, naphthalene-2,3-dicarboxaldehyde (NDA), is a modification from o-phthalaldehyde (OPA) and yields more stable derivs. with high fluorescence efficiencies. An autosampler was programmed to mix amino acid samples with cyanide and NDA reagent, allow a programmed reaction time and finally inject onto the HPLC. To study sample matrix effects, amino acid samples were spiked with various concns. of Tris-HCl, phenol, citrate, sulfosalicylic acid, sodium chloride and sodium dodecyl sulfate. The recoveries of amino acids in varied sample matrixes were compared to pure amino acid stds. The matrix effects using the NDA method were similar to those using the Fmoc method. Comparisons of all three methods are discussed and tabulated.

L27 ANSWER 34 OF 48 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1989:436238 CAPLUS
DOCUMENT NUMBER: 111:36238
TITLE: A device and method for self-contained solid-phase immunodiffusion assay
INVENTOR(S): Bernstein, David
PATENT ASSIGNEE(S): New Horizons Diagnostics Corp., USA
SOURCE: PCT Int. Appl., 33 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 8804431	A1	19880616	WO 1987-US3169	19871201
W: AU, BB, BG, BR, DK, FI, HU, JP, KP, KR, LK, MC, MG, MW, NO, RO, SD, SU, US				
RW: AT, BE, BJ, CF, CG, CH, CM, DE, FR, GA, GB, IT, LU, ML, MR, NL, SE, SN, TD, TG				
US 4770853	A	19880913	US 1986-938003	19861203
AU 8810518	A	19880630	AU 1988-10518	19871201

EP 293447	A1	19881207	EP 1988-900311	19871201
EP 293447	B1	19940831		
R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
JP 01502054	T	19890713	JP 1988-500684	19871201
US 5169789	A	19921208	US 1991-818439	19911227
PRIORITY APPLN. INFO.:			US 1986-938003	A2 19861203
			WO 1987-US3169	A 19871201
			US 1988-262503	B1 19880729

AB A device and method for a self-contained solid-phase immunodiffusion assay are comprised of a sample collector and a prefabricated laminate which can be used in many different forms. For example, the sample collector and laminate can be used with a tube having compartmentalized reagents. The seals can be broken through pressure on the sample collector. The sample collector is pushed through the seals, mixed with reagent, and then pushed into a ligand-receptor reaction area which is part of the laminate. The tip of the sample collector contacts diffusible porous membranes or filters and transfers the reactants to a capture membrane wherein a ligand-receptor reaction can be examined visually or otherwise. Group C streptococcal phage-associated lysin (which fragments and solubilizes group A streptococcal polysaccharides) in citrate-phosphate buffer (pH 6.1) containing rabbit IgG, EDTA, dithiothreitol, and NaN3 was mixed (3:1) with rabbit anti-streptococcal group A-coated Au sol particles (absorbance 1.5 at 518 nm) in Tris buffer (pH 8.2) containing bovine serum albumin, Na heparin, N-acetylglucosamine, and NaN3. The combined reagent was sterile filtered, aliquoted into acrylic-walled reaction cup vessels having an Al foil-sealed bottom, frozen, and lyophilized. The vessels were sealed with Al foil and contact cement under N. Another reaction vessel was cemented to the Al foil lid of the 1st, distilled H2O was added, and the vessel was sealed with Al foil. The vessels were placed in a cylindrical tube above the ligand-receptor area having a diacetate laminate membrane with holes containing nitrocellulose membranes, one coated with rabbit anti-group A streptococcal antibody (capture membrane) and the other coated with rabbit IgG (control). The membranes were covered by a 1.2-μm cellulose acetate prefilter. A Dacron-tipped swab was seeded with group A streptococci, placed in a tube, and forced downward to break the 1st 2 seals of the reaction vessels. The swab was incubated for 4 min and then forced down through the 3rd seal into the lower portion. The fluid diffused through the prefilter into the capture and control membranes. After 30 s the tab on the ligand-receptor area was pulled away and examined by eye. Group A streptococci at 2 + 103 organisms gave a distinct color reaction compound to the colorless control membrane.

L27 ANSWER 35 OF 48 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER:	1989:474379 CAPLUS
DOCUMENT NUMBER:	111:74379
TITLE:	Method and kit for preparation of mucoid secretions for bacterial assays and concentration of bacterial species in biological specimens
INVENTOR(S):	Kacian, Daniel Louis
PATENT ASSIGNEE(S):	Gen-Probe, Inc., USA
SOURCE:	Eur. Pat. Appl., 9 pp. CODEN: EPXXDW
DOCUMENT TYPE:	Patent
LANGUAGE:	English
FAMILY ACC. NUM. COUNT:	1
PATENT INFORMATION:	

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 285439	A2	19881005	EP 1988-302941	19880331

EP 285439	A3	19900718		
EP 285439	B1	19940907		
R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
WO 8807539	A1	19881006	WO 1988-US959	19880330
W: AU, JP, KR				
AU 8816223	A	19881102	AU 1988-16223	19880330
AU 619745	B2	19920206		
JP 01503006	T	19891012	JP 1988-503551	19880330
JP 2849103	B2	19990120		
EP 586024	A1	19940309	EP 1993-203140	19880331
EP 586024	B1	19990120		
R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
ES 2058263	T3	19941101	ES 1988-302941	19880331
AT 176000	T	19990215	AT 1993-203140	19880331
ES 2126626	T3	19990401	ES 1993-203140	19880331
KR 9707865	B1	19970517	KR 1988-71580	19881201
US 5364763	A	19941115	US 1992-893894	19920604
JP 09168399	A	19970630	JP 1996-293687	19961106
JP 2971821	B2	19991108		

PRIORITY APPLN. INFO.:	US 1987-33435	A 19870401
	US 1988-173612	A 19880325
	JP 1988-503551	A3 19880330
	WO 1988-US959	A 19880330

AB Mucoid secretions and other viscous biol. samples are liquified by sequential or simultaneous treatment with a sulfhydryl reagent and a DNA digestion agent. Separation and selective lysis of leukocytes in the treated specimen allow isolation of bacteria associated with leukocytes, notably mycobacteria. Further reduction in viscosity of the white cell lysate is accomplished by treatment with the DNA digestion agent. A kit is claimed for assaying biol. specimens for selected bacteria by the above method. Twelve sputum samples of all types were each mixed with an equal volume of solubilizing reagent containing 1M dithiothreitol, 0.1M Tris-HCl (pH 8.0), and 0.25% bovine pancreatic DNase I. All sputum samples liquified quickly and completely. To sputum pretreated with dithiothreitol was added a 30% Na deoxycholate solution Viscosity due to released leukocyte DNA was reduced by further treatment with DNase I. The pelleted cell fraction from a sputum (acid-fast pos.) sample pretreated with dithiothreitol was assayed for presence of mycobacteria. At least 1.6 + 107 mycobacteria per 0.5 mL sputum were found in the cell-associated fraction.

L27 ANSWER 36 OF 48 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER:	1987:572007 CAPLUS
DOCUMENT NUMBER:	107:172007
TITLE:	A method for fluorescence-polarization liposome immunoassay and reagents therefor
INVENTOR(S):	Imai, Kyoko; Nomura, Yasushi
PATENT ASSIGNEE(S):	Hitachi, Ltd. , Japan
SOURCE:	Eur. Pat. Appl., 15 pp. CODEN: EPXXDW
DOCUMENT TYPE:	Patent
LANGUAGE:	English
FAMILY ACC. NUM. COUNT:	1
PATENT INFORMATION:	

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 222341	A1	19870520	EP 1986-115452	19861107
EP 222341	B1	19900523		
R: CH, DE, FR, GB, LI, SE				
JP 62110155	A	19870521	JP 1985-248841	19851108
JP 06050315	B	19940629		

US 4916080 A 19900410 US 1986-927932 19861107
PRIORITY APPLN. INFO.: JP 1985-248841 A 19851108

AB Microcapsules labeled with an antigen or antibody for use in a fluorescence-polarization liposome immunoassay, contain a fluorescent substance, e.g. carboxyfluorescein and a substance that changes the viscosity from that outside the capsule, e.g. polyvinyl alc. The microcapsules are mixed with a sample and complement, any antigen-antibody complex formed activates complement which lyses the microcapsules. The degree of polarization fluorescence is measured for analyte concn. calcns. A highly viscous solution was prepared by dissolving fluorescein isothiocyanate in veronal buffer containing 15% glycerin as a viscosity modifier. Liposomes of sphingomyelin were prepared that had antibodies to α-fetoprotein attached and that contained the high-viscosity solution The liposome reagent, sample, complement (serum), and veronal buffer were mixed and incubated at 37° for 15 min. The degree of abolishment of fluorescence polarization was determined as a measure of α-fetoprotein concn .

L27 ANSWER 37 OF 48 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1987:473841 CAPLUS
DOCUMENT NUMBER: 107:73841
TITLE: Liposome immunoassay reagent and method
INVENTOR(S): Kung, Viola Tze; Canova-Davis, Eleanor; Redemann, Carl Temple
PATENT ASSIGNEE(S): Cooper-Lipotech, Inc., USA
SOURCE: PCT Int. Appl., 56 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 8604682	A1	19860814	WO 1986-US279	19860207
W: JP				
RW: AT, BE, CH, DE, FR, GB, IT, LU, NL, SE				
US 4622294	A	19861111	US 1985-699860	19850208
EP 215027	A1	19870325	EP 1986-901277	19860207
R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
JP 62501800	T	19870716	JP 1986-501117	19860207
US 4783400	A	19881108	US 1986-898440	19860820

PRIORITY APPLN. INFO.: US 1985-699860 A 19850208
CA 1986-501398 A 19860207
WO 1986-US279 W 19860207

AB A liposome assay reagent for the determination of an analyte in a homogeneous immunoassay comprises a suspension of oligolamellar lipid vesicles containing encapsulated glucose-6-phosphate dehydrogenase (G6PD), at a specific activity of .apprx.1-15 units/μmole vesicle lipid, and glucose-6-phosphate (G6P) at a concn. of .apprx.2-50, preferably .apprx.5-25 mM. The vesicles have surface-bound ligands that bind specifically and with high affinity to soluble anti-ligands to procedure cell lysis and enzyme release from the liposomes on addition of serum complement. The encapsulated G6P protects the enzyme against inactivation during preparation by reverse phase evaporation in the presence of organic solvent, and during storage as an aqueous suspension. The dipalmitoylphosphatidylethanolamine (DPPE) amide of 3-(4-carboxybutyl)5,5-diphenylhydantoin (I) was prepared from Na phenytoin by reaction with 5-bromovalerate Me ester, acid hydrolysis, and reaction with DPPE in the presence of diclohexylcarbodiimide and triethylamine. Liposomes containing I and

encapsulated G6PD (7 units/μmol) and G6P (8 mM) were formed by reverse phase evaporation and purified by mol.-sieve chromatog. to make a stable lipid vesicle reagent. A competitive inhibition assay for phenytoin comprised (1) reaction of reagent, sample, and antibody to phenytoin; (2) incubation of the mixt. with guinea pig serum (containing complement), NAD, and G6P; (3) stopping the reaction with Na2CO3; and (4) measuring released G6PDH at 340 nm. The assay showed linearity and sensitivity over a 2.5-30 μg/mL phenytoin range.

L27 ANSWER 38 OF 48 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1986:202142 CAPLUS
DOCUMENT NUMBER: 104:202142
TITLE: Apparatus and method for measuring endotoxin
INVENTOR(S): Sakata, Yoshitsugu; Oishi, Haruki; Hatayama, Yasumichi; Shiraishi, Hirome; Yanagisawa, Kazuya
PATENT ASSIGNEE(S): Wako Pure Chemical Industries, Ltd. , Japan
SOURCE: Eur. Pat. Appl., 40 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 173021	A2	19860305	EP 1985-107877	19850625
EP 173021	A3	19861008		
EP 173021	B1	19920520		
R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
JP 61011641	A	19860120	JP 1984-132445	19840627
JP 05076583	B	19931022		
JP 61159162	A	19860718	JP 1984-281616	19841228
JP 05031744	B	19930513		
EP 347951	A2	19891227	EP 1989-114580	19850625
EP 347951	A3	19900606		
EP 347951	B1	19930804		
R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
AT 76507	T	19920615	AT 1985-107877	19850625

PRIORITY APPLN. INFO.:			
JP 1984-132445	A	19840627
JP 1984-281616	A	19841228
EP 1985-107877	P	19850625

AB An apparatus and method are described for measuring endotoxin, which comprises mixing the sample with an endotoxin-gelating reagent to give ≥1 sample solns., measuring a light transmission through each sample soln at an initial stage (Io) and after reaction time t (It) to give a ratio Rt = It/Io, and observing the gelation point by the ratio Rt reaching a predetd. threshold value in the range of 75-97% or obtaining a gelation time from the gelation point. For example, endotoxin concns. were measured by mixing Limulus amebocyte lysate and 6 endotoxin solns. of different concs. and changes of transmitted light were measured maintaining the sample solns. at 37° with Rt of 95%. The measurements were repeated 16 times. The endotoxin concn. was calculated from a standard curve. A high precision of endotoxin determination was observed over a very wide concn. range.

L27 ANSWER 39 OF 48 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1987:219665 CAPLUS
DOCUMENT NUMBER: 106:219665
TITLE: Simple assay system with the Limulus amebocyte lysate for endotoxins

AUTHOR(S): Nakajo, Masayuki; Nagasaki, Senkichi
CORPORATE SOURCE: Cent. Res. Inst., Daiichi Seiyaku Co., Ltd., Tokyo, 134, Japan
SOURCE: Bokin Bobai (1986), 14(12), 605-9
CODEN: BOBODP; ISSN: 0385-5201
DOCUMENT TYPE: Journal
LANGUAGE: Japanese
AB The Limulus test, which is based on the gelation of Limulus amebocyte lysate (LAL) was used for the detection and determination of bacterial endotoxins [lipopolysaccharide (LPS)]. In order to facilite monitoring of bacterial contamination of purified water for pharmaceutical manufacture A simple assay system of LPS using the LAL reagent was performed by measuring the gelation time on mixing a small amount of LAL reagent with sample containing LPS on a plastic Petri dish. The gelation time, correlated well with LPS concns. of 0.05-100 ng mL. The amount of LAL reagent and sample required in this assay system were estimated with 1/5.apprx.1/10 of those of the conventional LAL assay.

L27 ANSWER 40 OF 48 COMPENDEX COPYRIGHT 2007 EEI on STN
ACCESSION NUMBER: 1986(8):116237 COMPENDEX
DOCUMENT NUMBER: *86127162
; 860879035
TITLE: ALUMINUM-IRON COAGULANTS FROM METALLURGICAL PLANT WASTES.
AUTHOR: Zakharova, V.I.; Nikolaev, I.V.; Lutsenko, G.N.
SOURCE: Sov J Water Chem Technol v 7 n 5 1985 p 94-97
SOURCE: Sov J Water Chem Technol v 7 n 5 1985 p 94-97
CODEN: SJWTDP
PUBLICATION YEAR: 1985
DOCUMENT TYPE: Journal
TREATMENT CODE: Experimental
LANGUAGE: English
AN 1986(8):116237 COMPENDEX DN *86127162; 860879035
AB Red sludge from alumina production and spent pickling liquors from metallurgical production are tested for production of a mixed aluminum-iron coagulant.The effect of basic technological factors on the indices of acid breakdown of the red sludge and on the filtration capacity of the slurry are studied, and the optimal conditions of the processes are determined.Samples of aluminum-iron coagulant produced from metallurgical wastes are tested under actual water treatment conditions.The high efficiency of samples of coagulant for reagent treatment of waste water permits recommendation of the proposed method for adoption.(Author abstract) 3 refs.

L27 ANSWER 41 OF 48 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1980:444044 CAPLUS
DOCUMENT NUMBER: 93:44044
TITLE: Hydrolyzate preparation for amino acid determinations in feed constituents. 8. Studies of oxidation conditions for streamlined procedures
AUTHOR(S): Mason, V. C.; Bech-Andersen, S.; Rudemo, M.
CORPORATE SOURCE: Natl. Inst. Animal Sci., Copenhagen, DK-1958, Den.
SOURCE: Zeitschrift fuer Tierphysiologie, Tierernaehrung und Futtermittelkunde (1980), 43(3), 146-64
CODEN: ZTTFAA; ISSN: 0044-3565
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The first experiment examined the influence on amino acid recoveries of oxidizing a variety of feeds and mixts. (containing .apprx.10 mg N) with 5 or 10 mL oxidation reagent containing 0, 25, or 50 mg phenol [108-95-2] (halogen

scavenger), and the effect of bubbling Ar through the hydrolysis solution under reflux. The second experiment investigated the time required to prepare a performic acid-H2O2 reagent and also examined the significance of the water content of this reagent. In agreement with earlier findings, the first experiment showed that oxidation had little effect on the recoveries of amino acids relative to those obtained with unoxidized material, although histidine [71-00-1] suffered losses of 2.7-5.0% and tyrosine [60-18-4] much greater losses according to the method of oxidation employed. In contrast, aspartic acid [56-84-8] and threonine [72-19-5] tended to give higher recoveries with oxidized samples. The inclusion of phenol in the oxidation reagent had a pos. effect on the recoveries of leucine [61-90-5], lysine [56-87-1], phenylalanine [63-91-2], proline [147-85-3], and, particularly, tyrosine, but a slightly detrimental influence on the ests. of aspartic acid and cystine [56-89-3]. The use of 5 rather than 10 mL oxidation reagent improved the recoveries of arginine [74-79-3], phenylalanine, and tyrosine, but gave slightly lower ests. for cystine and, perhaps methionine [63-68-3]. Ar bubbling during hydrolysis gave slightly higher recoveries of cystine and serine, but lower values for isoleucine [73-32-5] and valine [72-18-4]. Most of these effects were small, and of no practical importance. In the reagent preparation study, time did not affect the recovery of any amino acid within the range examined However, maximum recoveries of cystine, isoleucine, leucine, and valine were achieved by using 99% formic acid [56-41-7] for the preparation of reagent; the optimum response for methionine and tyrosine was obtained with 77% formic acid. In routine feed analyses, all amino acids except tryptophan and tyrosine can be determined in samples (0.1-1.0 g, 10 mg N, and maximum 100 mg water) oxidized at 0° for 16 h with a performic acid-H2O2 reagent, made by mixing 0.5 mL 30% H2O2 with 4.5 mL 88% formic acid containing 25 mg phenol and holding at 30° for 1 h. The remainder of the anal. can be made according to a streamlined procedure devoid of filtration and evaporation steps.

L27 ANSWER 42 OF 48 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1979:182803 CAPLUS
DOCUMENT NUMBER: 90:182803
TITLE: Reagents for quantitation of L-lysine
INVENTOR(S): Kurimura, Yasuo; Makiguchi, Nobuyoshi; Soda, Kenji
PATENT ASSIGNEE(S): Mitsui Toatsu Chemicals, Inc., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 54024085	A	19790223	JP 1977-88803	19770726
JP 60057838	B	19851217		

PRIORITY APPLN. INFO.: JP 1977-88803 A 19770726

AB A reagent mixt. consisting of L-lysine -α-ketoglutarate-ε-transaminase (I), glutamate dehydrogenase, coenzymes, electron transport mediator, and tetrazolium salt is used to quantitate L-lysine in food, natural products, clin. samples, etc. The L-lysine levels in samples are determined by colorimetry of formazan formed after incubation of samples in the reagent mixt. This method is simple and highly specific for L-lysine which may be directly determined in the presence of other amino acids. Thus, 0.1 mL samples containing 0.05-1.0 μM L- lysine-HCl were incubated with 1.3 mL of a reagent mixt. containing 20

μM Na α-ketoglutarate, 0.05 μM pyridoxal phosphate, 25 μM K phosphate buffer (pH 8.2), 3 μM NAD, 100 μg each of P-iodonitrotetrazolium violet, phenazine methosulfate and I, and 50 μg glutamate dehydrogenase. After incubation for 60 min at 37°, the system was acidified, centrifuged, and the supernatant was measured at 515 nm; the absorbance at 515 nm was pos. correlated with the L-lysine concn. in the samples, and the recovery was 99.2%.

L27 ANSWER 43 OF 48 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1978:402810 CAPLUS
DOCUMENT NUMBER: 89:2810
TITLE: Reagents for quantitation of lysolecithins
INVENTOR(S): Hayashi, Hiroaki; Watanabe, Katsuyuki; Tadano, Toshio
PATENT ASSIGNEE(S): Kyowa Hakko Kogyo Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 53016691	A	19780215	JP 1976-90163	19760730
PRIORITY APPLN. INFO.:			JP 1976-90163 A	19760730

AB Lysolecithins in biol. samples are quantitated by using an enzymic reagent mixt. consisting of phospholipase B (I), glycerophosphorylcholine diesterase (II), choline dehydrogenase (III), and H+ acceptor. Optionally, a reagent mixture consisting of I, II, III, betaine aldehyde dehydrogenase, and NAD is used. The lysolecithin contents are determined by measuring the reduced H+ acceptor or NADH formed in these 2 systems. Thus, 100 μL serum from a normal donor was incubated with 3 mL glycylglycine buffer (0.15 M, pH 7.2) containing 0.04, 0.04, 5, and 5 IU I, II, III, and betaine aldehyde dehydrogenase, resp., and 30 mM NAD at 37° for 15 min. Measurement of NADH at 340 nm gave the serum lysolecithin concn. as .apprx.15-20 ng/dL.

L27 ANSWER 44 OF 48 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1975:151830 CAPLUS
DOCUMENT NUMBER: 82:151830
TITLE: Reagent and method for determining glutathione
INVENTOR(S): Woodbridge, Joseph E.
PATENT ASSIGNEE(S): Princeton Biomedix, Inc.
SOURCE: U.S., 4 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3864085	A	19750204	US 1973-411228	19731031
PRIORITY APPLN. INFO.:			US 1973-411228 A	19731031

AB Reduced glutathione (GSH) is determined in blood by mixing a sample of the blood with a reagent consisting of stabilized H2WO4, EtOH, and 5,5'-dithiobis-(2-nitrobenzoic acid) (DTNB). The supernatant is separated from the precipitate which forms, and the optical d. (O. D.) of the supernatant is measured against H2O at 412 nm. The supernatant is mixed with a buffer so that the pH of the mixture is 7-10; the O. D. of

the mixture is measured at 412 nm and the concn. of GSH is determined from the O. D. measurements. Thus, the GSH reagent was prepared to contain Na2WO4 22.0, H3PO4 (anhydrous) 1.04, H2SO4 (anhyd) 8.26, and DTNB 0.4 g, EtOH 400 ml, and the balance of 1 l. made up with distilled H2O. The H2SO4 and H3PO4 were added to 500 ml of distilled H2O and mixed. The Na2WO4 was dissolved in 50 ml of H2O and added to the acid mixture The EtOH was then added. The DTNB was added and the mixture was stirred 1 hr. The mixture was filtered and dispensed in brown bottles. The buffer was prepared to contain Na2HPO4 (anhydrous) 198.7 and KH2PO4 (anhydrous) 101.7 g/l. To 5 ml tubes 0.5 ml of the buffer was dispensed and then freeze-dried. For the determination of GSH, 2.3 ml of distilled H2O and 0.2 ml of whole blood were mixed in a tube; a 5 min period of lysing was allowed. Thereafter 2.5 ml of the above reagent was added, the tube was covered, and the mixture was shaken for 5-20 sec to give a smooth, gray product. The tube was then centrifuged for 5 min at 2000 rpm. Supernatant (2.5 ml) was removed and placed in a 1.0 cm2 cuvet. The O. D. at 412 nm against H2O was measured. The contents of the cuvet were poured into the dry buffer prepared above and swirled until the buffer dissolved, giving a pH of 7. The O. D. was measured exactly 5 min after the buffer was added. The hematocrit was determined for each sample of blood. The method used with serums showed there was no GSH in serum. When used with 3 stds., there was excellent reproducibility of the method.

L27 ANSWER 45 OF 48 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1967:483071 CAPLUS
DOCUMENT NUMBER: 67:83071
TITLE: Resistance of different celluloses to hydrolysis on heating with water and aqueous solutions of organic acids
AUTHOR(S): Gromovs, V.; Freibergs, A.
SOURCE: Latvijas PSR Zinatnu Akademijas Vestis, Kimijas Serija (1967), (2), 236-41
CODEN: LZAKAM; ISSN: 0002-3248
DOCUMENT TYPE: Journal
LANGUAGE: Russian
AB Cotton cellulose (I), com. sulfite pulp (II), or bleached II (III) were heated for 2 hrs. at 160° in a stainless-steel autoclave with distilled H2O, a 36% solution of Na xylenesulfonate, a 1.2% solution of HOAc, 0.92% HCO2H, 0.5% Na2CO3, or 6% Na2SO3. The solid residue was filtered , washed, dried, and examined For various cellulose samples, the reagent, pH of the mixt., % residual cellulose, % lignin, % α-cellulose, d.p., breaking length, folding endurance are given. Best results (mech. properties) were obtained by treatment of sulfite pulp with 6% Na2SO3. Breaking length was 9088 m. and folding endurance 3849 double folds. Residual cellulose was 98.2% and α-cellulose 88.0%; d.p. was 946. Similar results were obtained with industrial sulfate cellulose. A decrease of III strength on heating with H2O and organic acids was attributed to the presence of residual bleaching agents, which promote hydrolytic destruction.

L27 ANSWER 46 OF 48 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1965:482220 CAPLUS
DOCUMENT NUMBER: 63:82220
ORIGINAL REFERENCE NO.: 63:15212f-h
TITLE: An improved and rapid test for detection of marihuana with diazotized p-nitroaniline
AUTHOR(S): Irudayasamy, A.; Natarajan, A. R.
CORPORATE SOURCE: State Forensic Sci. Lab., Madras
SOURCE: Indian Journal of Chemistry (1965), 3(7), 327-8
CODEN: IJOCAP; ISSN: 0019-5103

DOCUMENT TYPE: Journal
LANGUAGE: English

AB A simple colorimetric method is described for the detection of mg. amts. of marihuana in fragmented plant material. The method which is based on the reaction of the phenolics of marihuana with diazotized p-O2NC6H4NH2 could be used as a rapid field method for marihauna detection in the presence of tobacco or other plant materials confg. phenolic constituents. Thus, a 5-mg. sample was shaken for 10 min. with 10 ml. 1:1 CHCl3-petr. ether, filtered, the extract evaporated to dryness (water bath), and the residue dissolved in 6 ml. EtOH and transferred to a separatory funnel, and 4 ml. diazotized p-O2NC6H4NH2 reagent (prepared by diazotizing 0.025 g. p-O2NC6H4NH2 in 100 ml. 0.2N HCl with 2 vols. 0.02% NaNO2, allowing to stand 10 min., adding 1 volume 0.5% NH4 sulfonate solution, diluting to 40 vols. with distilled H2O, and storing at 5°) was then added and the contents mixed thoroughly. Five ml. 0.1N KOH was added with continuous shaking followed by addition of 20 ml. ether. To the organic layer was added 20 ml. alkaline aqueous alc. reagent (7 vols. 0.03N KOH + 13 vols. 95% EtOH), the solution shaken 5 sec., and 1 ml. EtOH added. The ether layer assumed a reddish-purple color. The addition of 1 ml. EtOH improved the color of the dye and also hastened the separation of the layers.

L27 ANSWER 47 OF 48 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1953:72486 CAPLUS
DOCUMENT NUMBER: 47:72486
ORIGINAL REFERENCE NO.: 47:12236i,12237a-f
TITLE: Mechanism of alcoholysis of esters. I. Alcoholysis of methyl and butyl propionates and acrylates in acid medium
AUTHOR(S): Buess-Thiernagand, D.; Fierens, P. J. C.
CORPORATE SOURCE: Univ. libre, Brussels
SOURCE: Bulletin des Societes Chimiques Belges (1952), 61, 403-26
CODEN: BSCBAG; ISSN: 0037-9646
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

GI For diagram(s), see printed CA Issue.

AB It is known that ester alcoholysis in basic solution is "bimol.," with rupture of the acyl-O bond, and that in neutral solution a "monomol." mechanism is operative, with breakage of the alkyl-O bond; the latter mechanism holds also for acid-catalyzed alcoholysis of tertiary alkyl esters: acid-catalyzed alcoholyses of primary alkyl esters are now shown to be bimol. This is done by establishing a parallelism of the latter reaction with known bimol. reactions in terms of resonance effects on activation energies. The results of reactions Reaction, R = Et, Eact. kcal./mole, log PZ, Eact. kcal./mole, log PZ; (1) RCO2H + MeOH, 10.0, 6.1, 12.4, 6.2; (2) RCO2Et + H2O, 16.2, 7.5, 18.1, 7.4; (3) RCO2Bu + MeOH, 12.7, 4.4, 14.4, 4.7; (4) RCO2Me + BuOH, 12.6, 4.3, 14.2, 4.5; (1) and (2) of the acrylic system were obtained by methods described in the literature, from which the data of the propionic system are presented for comparison. Reactions (3) and (4) are in an equilibrium which was approached from both sides, the concn. of reagents being determined at various time intervals: equimolar quantities of the reagents plus 1 mole-% of p-MeC6H4SO3H (I) (catalyst) sealed in tubes, were placed in a thermostat, cooled in Dry Ice-Me2CO after determinate time intervals, a 10 cc. sample and 15 cc. of water pipetted into a glass-stoppered Erlenmeyer, shaken in an ice bath, centrifuged, 10 cc. of the aqueous phase was then heated with a known excess of NaOH 20 min. on a water bath, back-titrated with HCl, and the titer finally compared with a calibration curve prepared from mixts. of known composition The d20 of the reagents used were: acrylic acid 1.0513, Me ester, 0.9535, Et ester,

0.9234, Bu ester, 0.8998, EtCO2Me, 0.9153, EtCO2Bu 0.8778. Rate consts. of (1) in absolute MeOH (e.g., 0.5N acid, 0.005N I) were calculated as 1st-order at 4 temps. between 58.3 and 77.6°. The consts. of (2) were similarly measured in 70% aqueous Me2CO between 86.4 and 101.0°. (3) and (4) yielded 2nd-order consts. at 5 temps. All groups of consts. gave straight Arrhenius plots. For the reaction written as (4) = (3), the equilibrium constant over that temperature range was K = 0.59 for the propionates and 1.17 for the acrylates. Interpretation of the results in terms of Eact. is particularly significant on account of the constancy of PZ. The increase in Eact of (3) and (4) by changing from propionate to acrylate parallels that of (1) and (2), which is attributed to the electromeric effect in the bimol. transition state. A monomol. mechanism would require the inverse order of reactivity. Therefore, the results indicate a mechanism: RCO2R' + H+ = RCO2R'H+; RCO2R'H+ + R''OH =(slow) RCO2R''H+ + R'OH; RCO2R''H+ = RCO2R'' + H+.

L27 ANSWER 48 OF 48 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1918:12080 CAPLUS
DOCUMENT NUMBER: 12:12080
ORIGINAL REFERENCE NO.: 12:2073d-h
TITLE: Method of determining halogens, sulfur and nitrogen in presence of mercury
AUTHOR(S): Francois, M.
SOURCE: Compt. rend. (1918), 166, 1000-3
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

AB The ordinary methods of determining halogens in halides by means of the Ag compds. are inaccurate if Hg is present, because of the formation of double salts. It is therefore advantageous to remove the Hg by F.'s Zn method (Compt. rend. 166, 950; see preceding abstract). With the chloride, e, g., HgCl2 + Zn → Hg + ZnCl2. The resulting Zn salts can be dealt with by the usual grav. methods. For determination of S in artificial sulfides or in cinnabar, the HBr-Br solution mentioned in the former article is useful. Weigh out into a flask a test portion containing approx. 1 g. S; add 10 cc. HBr-Br solution (50 cc. Br, 50 cc. fuming HBr, 50 cc. H2O); shake frequently for 1 hr., then let stand for 24 hrs. Add 20 cc. H2O, thus obtaining a homogeneous liquid, to which add 1 g. pure Zn filings every half hr. until 5 g. have been added. Decant through a plain paper into a 250 cc. conical flask and wash the Zn 5 times by decantation. Weigh the BaSO4 obtained by precipitation of the filtrate . Results are exact. For determining N in amino and in ammonio compds. of Hg, weigh out not less than 1 g. sample into a conical flask, add 10 cc. H2SO4 for every 0.1 g., 1 g. KI (reagents to be free of NH3), and let the mixt. stand for 24 hrs. This preliminary treatment facilitates later work by making a partial attack on some difficultly decomposable substances such as di-mercury-ammonium iodide. After the 24 hrs., add 1 g. pure Zn filings every 30 mins. until 3 g. have been added; then let stand for 24 hrs. Then add 50 cc. H2O, and decant through a folded paper into a NH3 distillation flask. Break up the Zn with a rubber-tipped glass rod and wash 5 times by decantation. The determination of NH4 compds. in the filtrate may be proceeded with by the usual methods. If Hg derivatives of Me-amines or of Et-amines are analyzed, the corresponding amines evolved by distillation of the final filtrate may be estimated grav. by weighing the hydrochlorides.

=> display l37 1-29 ibib abs

L37 ANSWER 1 OF 29 COMPENDEX COPYRIGHT 2007 EEI on STN

ACCESSION NUMBER: 2007(10):10571 COMPENDEX
TITLE: Gravity-driven microfluidic particle sorting device with hydrodynamic separation amplification.
AUTHOR: Huh, Dongeun (Department of Biomedical Engineering University of Michigan, Ann Arbor, MI 48109, United States); Bahng, Joong Hwan; Ling, Yibo; Wei, Hsien-Hung; Kripfgans, Oliver D.; Fowlkes, J. Brian; Grotberg, James B.; Takayama, Shuichi
SOURCE: Analytical Chemistry v 79 n 4 Feb 15 2007 2007.p 1369-1376
SOURCE: Analytical Chemistry v 79 n 4 Feb 15 2007 2007.p 1369-1376
CODEN: ANCHAM ISSN: 0003-2700
PUBLICATION YEAR: 2007
DOCUMENT TYPE: Journal
TREATMENT CODE: Application; Theoretical; Experimental
LANGUAGE: English
AN 2007(10):10571 COMPENDEX
AB This paper describes a simple microfluidic sorting system that can perform size profiling and continuous mass-dependent separation of particles through combined use of gravity (1 g) and hydrodynamic flows capable of rapidly amplifying sedimentation-based separation between particles. Operation of the device relies on two microfluidic transport processes: (i) initial hydrodynamic focusing of particles in a microchannel oriented parallel to gravity and (ii) subsequent sample separation where positional difference between particles with different mass generated by sedimentation is further amplified by hydrodynamic flows whose streamlines gradually widen out due to the geometry of a widening microchannel oriented perpendicular to gravity. The microfluidic sorting device was fabricated in poly(dimethylsiloxane), and hydrodynamic flows in microchannels were driven by gravity without using external pumps. We conducted theoretical and experimental studies on fluid dynamic characteristics of laminar flows in widening microchannels and hydrodynamic amplification of particle separation. Direct trajectory monitoring, collection, and postanalysis of separated particles were performed using polystyrene microbeads with different sizes to demonstrate rapid (<1 min) and high-purity (>99.9%) separation. Finally, we demonstrated biomedical applications of our system by isolating small-sized (diameter <6 mum) perfluorocarbon liquid droplets from polydisperse droplet emulsions, which is crucial in preparing contrast agents for safe, reliable ultrasound medical imaging, tracers for magnetic resonance imaging, or transpulmonary droplets used in ultrasound-based occlusion therapy for cancer treatment. Our method enables straightforward, rapid, real-time size monitoring and continuous separation of particles in simple stand-alone microfabricated devices without the need for bulky and complex external power sources. We believe that this system will provide a useful tool to separate colloids and particles for various analytical and preparative applications and may hold potential for separation of cells or development of diagnostic tools requiring point-of-care sample preparation or testing.

L37 ANSWER 2 OF 29 COMPENDEX COPYRIGHT 2007 EEI on STN
ACCESSION NUMBER: 2006(35):7113 COMPENDEX
TITLE: Cells on chips.
AUTHOR: El-Ali, Jamil (Department of Chemical Engineering Center for Cell Decision Processes Massachusetts Institute of Technology, Cambridge, MA 02139, United States); Sorger, Peter K.; Jensen, Klavs F.
SOURCE: Nature v 442 n 7101 Jul 27 2006 2006.p 403-411
SOURCE: Nature v 442 n 7101 Jul 27 2006 2006.p 403-411
CODEN: NATUAS ISSN: 0028-0836 E-ISSN: 1476-4679

PUBLICATION YEAR: 2006
DOCUMENT TYPE: Journal
TREATMENT CODE: Bibliography; Theoretical
LANGUAGE: English
AN 2006(35):7113 COMPENDEX
AB Microsystems create new opportunities for the spatial and temporal control of cell growth and stimuli by combining surfaces that mimic complex biochemistries and geometries of the extracellular matrix with microfluidic channels that regulate transport of fluids and soluble factors. Further integration with bioanalytic microsystems results in multifunctional platforms for basic biological insights into cells and tissues, as well as for cell-based sensors with biochemical, biomedical and environmental functions. Highly integrated microdevices show great promise for basic biomedical and pharmaceutical research, and robust and portable point-of-care devices could be used in clinical settings, in both the developed and the developing world. $CPY@2006 Nature Publishing Group. 100 Refs.

L37 ANSWER 3 OF 29 COMPENDEX COPYRIGHT 2007 EEI on STN
ACCESSION NUMBER: 2006(20):6824 COMPENDEX
TITLE: Optical enhanced luminescent measurements and sequential reagent mixing on a centrifugal microfluidic device for multi-analyte point-of-care applications.
AUTHOR: Bartholomeusz, Daniel A. (Dept. of Bioengineering University of Utah 2480 MEB, Salt Lake City, UT 84112-9202, United States); Davies, Rupert H.; Andrade, Joseph D.
MEETING TITLE: Advanced Biomedical and Clinical Diagnostic Systems IV.
MEETING ORGANIZER: SPIE
MEETING LOCATION: San Jose, CA, United States
MEETING DATE: 22 Jan 2006-24 Jan 2006
SOURCE: Proceedings of SPIE - The International Society for Optical Engineering v 6080 2006.
SOURCE: Proceedings of SPIE - The International Society for Optical Engineering v 6080 2006., arn: 60800X
CODEN: PSISDG ISSN: 0277-786X
PUBLICATION YEAR: 2006
MEETING NUMBER: 67203
DOCUMENT TYPE: Conference Article
TREATMENT CODE: Theoretical
LANGUAGE: English
AN 2006(20):6824 COMPENDEX
AB A centrifugal-based microfluidic devicel was built with lyophilized bioluminescent reagents for measuring multiple metabolites from a sample of less than 15 muL. Microfluidic channels , reaction wells, and valves were cut in adhesive vinyl film using a knife plotter with features down to 30 mum and transferred to metalized polycarbonate compact disks (CDs). The fabrication method was simple enough to test over 100 prototypes within a few months. It also allowed enzymes to be packaged in microchannels without exposure to heat or chemicals. The valves were rendered hydrophobic using liquid phase deposition. Microchannels were patterned using soft lithography to make them hydrophilic. Reagents and calibration standards were deposited and lyophilized in different wells before being covered with another adhesive film. Sample delivery was controlled by a modified CD ROM. The CD was capable of distributing 200 nL sample aliquots to 36 channels, each with a different set of reagents that mixed with the sample before initiating the luminescent reactions. Reflection of light from the metalized layer and lens configuration allowed for 20% of the available light to be collected from each channel. ATP was

detected down to 0.1 muM. Creatinine, glucose, and galactose were also measured in micro and milliMolar ranges. Other optical-based analytical assays can easily be incorporated into the device design. The minimal sample size needed and expandability of the device make it easier to simultaneously measure a variety of clinically relevant analytes in point-of-care settings. 20 Refs.

L37 ANSWER 4 OF 29 COMPENDEX COPYRIGHT 2007 EEI on STN
ACCESSION NUMBER: 2004(18):1438 COMPENDEX
TITLE: Self-Contained, Fully Integrated Biochip for Sample Preparation, Polymerase Chain Reaction Amplification, and DNA Microarray Detection.
AUTHOR: Liu, Robin Hui (Ctr. for Appl. NanoBioscience Center Arizona State University, Tempe, AZ 85287, United States); Yang, Jianing; Lenigk, Ralf; Bonanno, Justin; Grodzinski, Piotr
SOURCE: Analytical Chemistry v 76 n 7 Apr 1 2004 2004.p 1824-1831
SOURCE: Analytical Chemistry v 76 n 7 Apr 1 2004 2004.p 1824-1831
CODEN: ANCHAM ISSN: 0003-2700
PUBLICATION YEAR: 2004
DOCUMENT TYPE: Journal
TREATMENT CODE: Theoretical
LANGUAGE: English
AN 2004(18):1438 COMPENDEX
AB A fully integrated biochip device that consists of microfluidic mixers, valves, pumps, channels, chambers, heaters, and DNA microarray sensors was developed to perform DNA analysis of complex biological sample solutions. Sample preparation (including magnetic bead-based cell capture, cell preconcentration and purification, and cell lysis), polymerase chain reaction, DNA hybridization, and electrochemical detection were performed in this fully automated and miniature device. Cavitation microstreaming was implemented to enhance target cell capture from whole blood samples using immunomagnetic beads and accelerate DNA hybridization reaction. Thermally actuated paraffin-based microvalves were developed to regulate flows. Electrochemical pumps and thermopneumatic pumps were integrated on the chip to provide pumping of liquid solutions. The device is completely self-contained: no external pressure sources, fluid storage, mechanical pumps, or valves are necessary for fluid manipulation, thus eliminating possible sample contamination and simplifying device operation. Pathogenic bacteria detection from approximately milliliters of whole blood samples and single-nucleotide polymorphism analysis directly from diluted blood were demonstrated. The device provides a cost-effective solution to direct sample-to-answer genetic analysis and thus has a potential impact in the fields of point-of-care genetic analysis, environmental testing, and biological warfare agent detection. 50 Refs.

L37 ANSWER 5 OF 29 COMPENDEX COPYRIGHT 2007 EEI on STN
ACCESSION NUMBER: 2004(7):4148 COMPENDEX
TITLE: Advances in on-chip photodetection for applications in miniaturized genetic analysis systems.
AUTHOR: Namasivayam, Vijay (Department of Chemical Engineering The University of Michigan, Ann Arbor, MI 48109-2136, United States); Lin, Rongsheng; Johnson, Brian; Brahmasandra, Sundaresh; Razzacki, Zafar; Burke, David T.; Burns, Mark A.
SOURCE: Journal of Micromechanics and Microengineering v 14 n 1 January 2004 2004.p 81-90
SOURCE: Journal of Micromechanics and Microengineering v 14 n

1 January 2004 2004.p 81-90
CODEN: JMMIEZ ISSN: 0960-1317
PUBLICATION YEAR: 2004
DOCUMENT TYPE: Journal
TREATMENT CODE: Theoretical; Experimental
LANGUAGE: English
AN 2004(7):4148 COMPENDEX
AB Microfabrication techniques have become increasingly popular in the development of next generation DNA analysis devices. Improved on-chip fluorescence detection systems may have applications in developing portable hand-held instruments for point-of-care diagnostics. Miniaturization of fluorescence detection involves construction of ultra-sensitive photodetectors that can be integrated onto a fluidic platform combined with the appropriate optical emission filters. We have previously demonstrated integration PIN photodiodes onto a microfabricated electrophoresis channel for separation and detection of DNA fragments. In this work, we present an improved detector structure that uses a PINN+ photodiode with an on-chip interference filter and a robust liquid barrier layer. This new design yields high sensitivity (detection limit of 0.9 mg mul-1 of DNA), low-noise (S/N [similar to] 100/1) and enhanced quantum efficiencies (>80%) over the entire visible spectrum. Applications of these photodiodes in various areas of DNA analysis such as microreactions (PCR), separations (electrophoresis) and microfluidics (drop sensing) are presented. 14 Refs.

L37 ANSWER 6 OF 29 COMPENDEX COPYRIGHT 2007 EEI on STN
ACCESSION NUMBER: 2003(30):11961 COMPENDEX
TITLE: Microfluidic chamber array for generating concentration gradients.
AUTHOR: Yamada, Masumi (Dept. of Chemistry and Biotechnol. School of Engineering University of Tokyo, Bunkyo-ku, Tokyo 113-8656, Japan); Seki, Minoru
MEETING TITLE: IEEE Sixteenth Annual International Conference on Micro Electro Mechanical Systems.
MEETING ORGANIZER: IEEE; Robotics and Automation Society
MEETING LOCATION: Kyoto, Japan
MEETING DATE: 19 Jan 2003-23 Jan 2003
SOURCE: Proceedings of the IEEE Micro Electro Mechanical Systems (MEMS) 2003.p 347-350, (IEEE cat n 03CH37426)
SOURCE: Proceedings of the IEEE Micro Electro Mechanical Systems (MEMS) 2003.p 347-350, (IEEE cat n 03CH37426) CODEN: PMEME5
PUBLICATION YEAR: 2003
MEETING NUMBER: 61161
DOCUMENT TYPE: Conference Article
TREATMENT CODE: Theoretical
LANGUAGE: English
AN 2003(30):11961 COMPENDEX
AB A novel microfluidic chamber array system has been developed. This system consists of three-dimensional microchannel and microchamber network, in which nanoliter sized multiple droplets can be accurately metered and mixed simultaneously. Liquid operation was realized using pneumatic pressure due to the hydrophobic surface nature of PDMS microdevice. With this device, single injection of liquid is enough to prepare various sized aliquots, and by mixing two different kinds of liquids, concentration gradient can easily be generated. This system can further be applied to chemical or biochemical analysis, such as, high-throughput screening or blood analysis for point-of-care diagnosis. 8 Refs.

L37 ANSWER 7 OF 29 COMPENDEX COPYRIGHT 2007 EEI on STN

ACCESSION NUMBER: 2003(1):11492 COMPENDEX
TITLE: Design, fabrication and testing of thermal components and their integration into a microfluidic device.
AUTHOR: Smekal, Thomas; Rhine, D.; Weston, D.; Grodzinski, P.
MEETING TITLE: 8th Intersociety Conference on Thermal and Thermommechanical phenomena in Electronic Systems.
MEETING ORGANIZER: IEEE
MEETING LOCATION: San Diego, CA, United States
MEETING DATE: 30 May 2002-01 Jun 2002
SOURCE: Thermomechanical Phenomena in Electronic Systems -Proceedings of the Intersociety Conference 2002.p 1039-1045, (IEEE cat n 02ch37258)
SOURCE: Thermomechanical Phenomena in Electronic Systems -Proceedings of the Intersociety Conference 2002.p 1039-1045, (IEEE cat n 02ch37258)
CODEN: PITEFT
PUBLICATION YEAR: 2002
MEETING NUMBER: 60571
DOCUMENT TYPE: Conference Article
TREATMENT CODE: Theoretical; Experimental
LANGUAGE: English

AN 2003(1):11492 COMPENDEX
AB Microfluidics devices and Microsystems are gaining significant popularity as they provide attractive solutions to automate and miniaturize the handling of fluids, reagents and other fluids used in DNA sample preparation, synthesis and screening. These devices greatly enhance a multitude of potential applications in the areas of point-of-care diagnostics, pharmacogenomics, high-throughput drug discovery, forensics, food safety, plant genomics, agriculture and military applications. In this paper we discuss design, integration and testing of thermal components in a microfluidic device designed for on-chip genetic sample preparation. A typical microdevice must perform several operations to be capable of analyzing a sample of body fluid (blood, urine, saliva), extracting DNA from concentrated cells, hybridization, purifying and amplifying DNA, and finally detecting DNA fragments of interest. In conventional bench-top PCR thermal cyclers, samples are mixed in stationary vessels to about 100 circle black L range and undergo a series of temperature shifts programmed to optimize the efficiency of each of the PCR steps. The time at a set temperature is the most critical component for each step. Reduction of the sample volume down to a few circle black Ls and improvement of the ramp times between temperature steps makes micro-PCR devices desirable. Thermal components such as heaters and resistive thermal devices (RTDs) are fabricated as an integral part of a complete genetic sample preparation micro-system. The ability to precisely control the temperature is a critical component of most microfluidic devices intended for on-chip genetic sample preparation. Devices were fabricated and demonstrated a temperature variation of [similar to] 1 deg C over the entire sample volume. A design of the device, including chamber dimensions, placement of the heating and cooling elements will be presented. The results of temperature cycling experiments will be shown. We have measured the heating rate of [similar to]2.4 deg C/s and the cooling rate of [similar to]2.0 deg C /s for devices tested under active heating/cooling control. Finally, a brief overview of relevant microfabrication methods wilt also be presented. 5 Refs.

L37 ANSWER 8 OF 29 COMPENDEX COPYRIGHT 2007 EEI on STN
ACCESSION NUMBER: 2001(35):1629 COMPENDEX
TITLE: Genetically designed biosensing systems for high-throughput screening of pharmaceuticals, clinical diagnostics, and environmental monitoring.

AUTHOR: Wenner, B.R. (Dept. of Chem. and Pharmaceut. Sci. University of Kentucky, Lexington, KY 40506, United States); Douglass, P.M.; Shrestha, S.; Sharma, B.V.; Lai, S.; Madou, M.J.; Daunert, S.
MEETING TITLE: Advances in Flourescence Sensing Technology V.
MEETING ORGANIZER: SPIE
MEETING LOCATION: San Jose, CA, United States
MEETING DATE: 24 Jan 2001-25 Jan 2001
SOURCE: Proceedings of SPIE - The International Society for Optical Engineering v 4252 2001.p 59-70
SOURCE: Proceedings of SPIE - The International Society for Optical Engineering v 4252 2001.p 59-70
CODEN: PSISDG ISSN: 0277-786X
PUBLICATION YEAR: 2001
MEETING NUMBER: 58309
DOCUMENT TYPE: Conference Article
TREATMENT CODE: Bibliography; Theoretical
LANGUAGE: English
AN 2001(35):1629 COMPENDEX
AB The genetically-modified binding proteins calmodulin (CaM), the phosphate binding protein (PBP), the sulfate binding protein (SBP), and the galactose/glucose binding protein (GBP) have been successfully employed as biosensing elements for the detection of phenothiazines, phosphate, sulfate, and glucose, respectively. Mutant proteins containing unique cysteine residues were utilized in the site-specific labeling of environment-sensitive fluorescent probes. Changes in the environment of the probes upon ligand-induced conformational changes of the proteins result in changes in fluorescence intensity. Calibration plots for the respective analytes were generated that relate the concentration of analyte with a change in fluorescence intensity of the biosensing element. The assays were also characterized in terms of their selectivity and the stability of the binding protein. To illustrate the usefulness of the reagents in high-throughput analyses for application in drug discovery, point-of-care diagnostics, and environmental monitoring, the assays were evaluated on a novel system-the CD platform. This microfluidic compact disc-based platform utilizes centrifugal force to control the release, flow, and mixing of buffers, reagents, and analytes in channels and reservoirs contained on the microfabricated CD. Coupling of fluorescence detection on this system with the genetically designed reagents provides highly sensitive assays for microscale applications. Specifically, the labeled proteins were shown to be sensitive to increasing concentrations of analyte in mL, muL, nL, and pL volume samples, with limits of detection in the sub-micromolar range. In addition, sol-gel composites have been investigated as a means of entrapping the aforementioned biorecognition elements for the purpose of immobilizing the proteins on a sensing platform such as the CD. The advantages of the CD platform and its application in drug discovery and diagnostics will be discussed, along with preliminary experiments showing the response of PBP in sol-gel composites. 50 Refs.

L37 ANSWER 9 OF 29 INSPEC (C) 2007 IET on STN
ACCESSION NUMBER: 2006:9014279 INSPEC
TITLE: Cells on chips
AUTHOR: El-Ali, J.; Sorger, P.K.; Jensen, K.F.
SOURCE: Nature (27 July 2006), vol.442, no.7101, p. 403-11, 100 refs.
CODEN: NATUAS, ISSN: 0028-0836
SICI: 0028-0836(20060727)442:7101L.403:CC;1-J
Published by: Nature Publishing Group, UK
DOCUMENT TYPE: Journal
TREATMENT CODE: Experimental
COUNTRY: United Kingdom

LANGUAGE: English
AN 2006:9014279 INSPEC
AB Microsystems create new opportunities for the spatial and temporal control of cell growth and stimuli by combining surfaces that mimic complex biochemistries and geometries of the extracellular matrix with microfluidic channels that regulate transport of fluids and soluble factors. Further integration with bioanalytic microsystems results in multifunctional platforms for basic biological insights into cells and tissues, as well as for cell-based sensors with biochemical, biomedical and environmental functions. Highly integrated microdevices show great promise for basic biomedical and pharmaceutical (research, and robust and portable point-of-care) devices could be used in clinical settings, in both the developed and the developing world

L37 ANSWER 10 OF 29 INSPEC (C) 2007 IET on STN
ACCESSION NUMBER: 2005:8255510 INSPEC
DOCUMENT NUMBER: A2005-05-8770E-028; B2005-02-7510D-318
TITLE: Integrated microfluidic biochips for immunoassay and DNA bioassays
AUTHOR: Liu, R.H.
SOURCE: Conference Proceedings. 26th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (IEEE Cat. No.04CH37558), Vol.7, 2004, p. 5394 Vol.7 of 7 vol. (lxxxvii+5459) pp.
ISBN: 0 7803 8439 3
Price: 0-7803-8439-3/04/$20.00
Published by: IEEE, Piscataway, NJ, USA
Conference: Conference Proceedings. 26th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, San Francisco, CA, USA, 1-5 Sept. 2004
DOCUMENT TYPE: Conference; Conference Article
TREATMENT CODE: Practical
COUNTRY: United States
LANGUAGE: English
AN 2005:8255510 INSPEC DN A2005-05-8770E-028; B2005-02-7510D-318
AB Bioassays involve multi-stage sample processing and fluidic handling, which are generally labor-intensive and time-consuming. Using microfluidic technology to integrate and automate all these steps in a single chip device is highly desirable in many practical applications such as clinical diagnostic and in-field environmental testing. We have developed self-contained and fully integrated biochip systems for immunoassay and DNA analysis. These microfluidic biochip devices can perform detection of multiple bioagents (including antigens and DNA) using electrochemical detection methods. Microfluidic mixer, valves, pumps, channels, chambers, and Combimatrix microelectrode array are integrated to perform parallel immunoassays to detect infectious particles (viruses and bacteria) from complex biological samples in a single, fully automated biochip device. All microfluidic components use very simple and inexpensive approaches in order to reduce chip complexity. Back-end detection is accomplished using an enzyme-based electrochemical detection method that has many advantages including high sensitivity (fM) and simple apparatus. The sensor is a miniaturized array of individually addressable microelectrodes controlled by active CMOS circuitry. Pathogenic bacteria and DNA detections are both demonstrated. The devices with capabilities of on-chip sample processing and detection provide a cost-effective solution to direct sample-to-answer biological analysis for point-of-care genetic analysis, disease diagnosis, and in-field bio-threat detection

L37 ANSWER 11 OF 29 INSPEC (C) 2007 IET on STN
ACCESSION NUMBER: 2004:7889875 INSPEC
DOCUMENT NUMBER: A2004-08-8780B-007; B2004-04-7230J-023
TITLE: Advances in on-chip photodetection for applications in miniaturized genetic analysis systems
AUTHOR: Namasivayam, V.; Rongsheng Lin; Johnson, B.; Brahmasandra, S.; Razzacki, Z.; (Dept. of Chem. Eng., Univ. of Michigan, Ann Arbor, MI, USA), Burke, D.T.; Burns, M.A.
SOURCE: Journal of Micromechanics and Microengineering (Jan. 2004), vol.14, no.1, p. 81-90, 14 refs.
CODEN: JMMIEZ, ISSN: 0960-1317
SICI: 0960-1317(200401)14:1L.81:ACPA;1-V
Price: 0960-1317/04/010081+10$30.00
Doc.No.: S0960-1317(04)62802-6
Published by: IOP Publishing, UK
DOCUMENT TYPE: Journal
TREATMENT CODE: Practical
COUNTRY: United Kingdom
LANGUAGE: English
AN 2004:7889875 INSPEC DN A2004-08-8780B-007; B2004-04-7230J-023
AB Microfabrication techniques have become increasingly popular in the development of next generation DNA analysis devices. Improved on-chip fluorescence detection systems may have applications in developing portable hand-held instruments for point-of-care diagnostics. Miniaturization of fluorescence detection involves construction of ultra-sensitive photodetectors that can be integrated onto a fluidic platform combined with the appropriate optical emission filters. We have previously demonstrated integration PIN photodiodes onto a microfabricated electrophoresis channel for separation and detection of DNA fragments. In this work, we present an improved detector structure that uses a PINN+ photodiode with an on-chip interference filter and a robust liquid barrier layer. This new design yields high sensitivity (detection limit of 0.9 ng μl-1 of DNA), low-noise (S/N 100/1) and enhanced quantum efficiencies (>80%) over the entire visible spectrum. Applications of these photodiodes in various areas of DNA analysis such as microreactions (PCR), separations (electrophoresis) and microfluidics (drop sensing) are presented

L37 ANSWER 12 OF 29 INSPEC (C) 2007 IET on STN
ACCESSION NUMBER: 2003:7743293 INSPEC
DOCUMENT NUMBER: A2003-21-4780-024; B2003-11-2575D-019
TITLE: Microfluidic chamber array for generating concentration gradients
AUTHOR: Yamada, M.; Seki, M. (Dept. of Chem. & Biotechnol., Univ. of Tokyo, Japan)
SOURCE: Proceedings IEEE Sixteenth Annual International Conference on Micro Electro Mechanical Systems (Cat. No.03CH37426), 2003, p. 347-50 of xxxiv+711 pp., 8 refs., Also available on CD-ROM in PDF format
ISBN: 0 7803 7744 3
Price: 0-7803-7744-3/03/$17.00
Published by: IEEE, Piscataway, NJ, USA
Conference: Proceedings IEEE Sixteenth Annual International Conference on Micro Electro Mechanical Systems, Kyoto, Japan, 19-23 Jan. 2003
DOCUMENT TYPE: Conference; Conference Article
TREATMENT CODE: Application
COUNTRY: United States
LANGUAGE: English

AN 2003:7743293 INSPEC DN A2003-21-4780-024; B2003-11-2575D-019
AB A novel microfluidic chamber array system has been developed. This system consists of three-dimensional microchannel and microchamber network, in which nanoliter sized multiple droplets can be accurately metered and mixed simultaneously. Liquid operation was realized using pneumatic pressure due to the hydrophobic surface nature of PDMS microdevice. With this device, single injection of liquid is enough to prepare various sized aliquots, and by mixing two different kinds of liquids, concentration gradient can easily be generated. This system can further be applied to chemical or biochemical analysis, such as, high-throughput screening or blood analysis for point-of-care diagnosis

L37 ANSWER 13 OF 29 INSPEC (C) 2007 IET on STN
ACCESSION NUMBER: 2003:7528534 INSPEC
DOCUMENT NUMBER: A2003-06-8760F-026; B2003-03-7510J-084
TITLE: Structural and functional imaging of microfluidic BioMEMS using an integrated optical coherence tomography and multi-photon microscope
AUTHOR: Boppart, S.A.; (Dept. of Electr. & Comput. Eng., Illinois Univ., Urbana, IL, USA), Zysk, A.; Schaefer, A.; Reynolds, J.; Marks, D.; Balberg, M.; Raskin, L.
SOURCE: Technical Digest. Summaries of papers presented at the Conference on Lasers and Electro-Optics. Conference Edition (IEEE Cat. No.02CH37337), vol.1, 2002, p. 476-7 vol.1 of (670+96 suppl.) pp., 0 refs.
ISBN: 1 55752 705 9
Published by: Opt. Soc. America, Washington, DC, USA
Conference: Technical Digest. Summaries of papers presented at the Conference on Lasers and Electro-Optics. Conference Edition, Long Beach, CA, USA, 19-24 May 2002
Sponsor(s): IEEE/Lasers & Electro-Opt. Soc.; OSA-Opt. Soc. America; Quantum Electron. Div. Eur. Phys. Soc.; Opt. Soc. Japanese Quantum Electron. Joint Group
DOCUMENT TYPE: Conference; Conference Article
TREATMENT CODE: Experimental
COUNTRY: United States
LANGUAGE: English
AN 2003:7528534 INSPEC DN A2003-06-8760F-026; B2003-03-7510J-084
AB The advancement of microfabrication techniques has led to increasingly complex microfluidic and bioMEM (biological micro electromechanical) systems. Three-dimensional microstructures such as microfluidic mixing systems, valves, and separation channels have been developed for biological and medical applications including low-level environmental microbial detection, high throughput drug screening, and point-of-care bedside monitoring of bacterial and viral infections

L37 ANSWER 14 OF 29 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2007:506743 CAPLUS
TITLE: Oral Fluid NanoSensor Test (OFNASET) with advanced electrochemical-based molecular analysis platform
AUTHOR(S): Gau, Vincent; Wong, David
CORPORATE SOURCE: GeneFluidics Inc., Monterey Park, CA, USA
SOURCE: Annals of the New York Academy of Sciences (2007), 1098(Oral-Based Diagnostics), 401-410
CODEN: ANYAA9; ISSN: 0077-8923
PUBLISHER: Blackwell Publishing, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB High-impact diseases, including cancer, cardiovascular disease, and neurol. disease, are challenging to diagnose without supplementing clin. evaluation with laboratory testing. Even with laboratory tools, definitive diagnosis often remains elusive. The lack of three crucial elements presents a road block to achieving the potential of clin. diagnostic tests: (1) definitive disease-associated protein and genetic markers, (2) easy and inexpensive sampling methods with minimal discomfort for the subject, and (3) an accurate and quant. diagnostic platform. Our aim is to develop and validate a solution for requirement (3) and also to develop a portable system. Requirements (1) and (2) will be addressed through the utilization of novel and highly specific oral cancer saliva proteomic and genomic biomarkers and the use of saliva as the biofluid of choice, resp. The Oral Fluid NanoSensor Test (OFNASET) technol. platform combines cutting-edge technologies, such as self-assembled monolayers (SAM), bionanotechnol., cyclic enzymic amplification, and microfluidics, with several well-established techniques including microinjection molding, hybridization-based detection, and mol. purification. The intended use of the OFNASET is for the point of care multiplex detection of salivary biomarkers for oral cancer. We have demonstrated that the combination of two salivary proteomic biomarkers (thioredoxin and IL-8) and four salivary mRNA biomarkers (SAT, ODZ, IL-8, and IL-1b) can detect oral cancer with high specificity and sensitivity. Our preliminary studies have shown compelling results. We sequentially delivered a serial dilution of IL-8 antigen, probe solution, wash, enzyme solution, wash, and mediator solution to sensor reaction chambers housed in a prototype cartridge and demonstrated strong signal separation at 50 pg/mL above a neg. control.

L37 ANSWER 15 OF 29 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2007:506741 CAPLUS
TITLE: Development of a microfluidic device for detection of pathogens in oral samples using upconverting phosphor technology (UPT)
AUTHOR(S): Abrams, William R.; Barber, Cheryl A.; McCann, Kurt; Tong, Gary; Chen, Zongyuan; Mauk, Michael G.; Wang, Jing; Volkov, Alex; Bourdelle, Pete; Corstjens, Paul L. A. M.; Zuiderwijk, Michel; Kardos, Keith; Li, Shang; Tanke, Hans J.; Niedbala, R. Sam; Malamud, Daniel; Bau, Haim
CORPORATE SOURCE: Department of Basic Sciences, New York University College of Dentistry, New York, NY, 10010, USA
SOURCE: Annals of the New York Academy of Sciences (2007), 1098(Oral-Based Diagnostics), 375-388
CODEN: ANYAA9; ISSN: 0077-8923
PUBLISHER: Blackwell Publishing, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Confirmatory detection of diseases, such as HIV and HIV-associated pathogens in a rapid point-of-care (POC) diagnostic remains a goal for disease control, prevention, and therapy. If a sample could be analyzed onsite with a verified result, the individual could be counseled immediately and appropriate therapy initiated. Our group is focused on developing a microfluidic "lab-on-a-chip" that will simultaneously identify antigens, antibodies, RNA, and DNA using a single oral sample. The approach has been to design individual modules for each assay that uses similar components (e.g., valves, heaters, metering chambers, mixers) installed on a polycarbonate base with a common reporter system. Assay miniaturization reduces the overall anal. time, increases accuracy by simultaneously identifying multiple targets, and enhances detector sensitivity by upconverting phosphor technol. (UPT). Our microfluidic approach employs four interrelated components:

(1) sample acquisition-OraSure UPlink collectors that pick-up and release bacteria, soluble analytes, and viruses from an oral sample; (2) microfluidic processing-movement of microliter vols. of analyte, target analyte extraction and amplification; (3) detection of analytes using UPT particles in a lateral flow system; and (4) software for processing the results. Ultimately, the oral-based microscale diagnostic system will detect viruses and bacteria, associated pathogen antigens and nucleic acids, and antibodies to these pathogens.

L37 ANSWER 16 OF 29 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2007:130942 CAPLUS
DOCUMENT NUMBER: 146:290745
TITLE: Continuous flow microfluidic device for cell separation, cell lysis and DNA purification
AUTHOR(S): Chen, Xing; Cui, Dafu; Liu, Changchun; Li, Hui; Chen, Jian
CORPORATE SOURCE: State Key Laboratory of Transducer Technology, Institute of Electronics, Chinese Academy of Sciences, Beijing, 100080, Peop. Rep. China
SOURCE: Analytica Chimica Acta (2007), 584(2), 237-243
CODEN: ACACAM; ISSN: 0003-2670
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A novel integrated microfluidic device that consisted of microfilter, micromixer, micropillar array, microweir, microchannel, microchamber, and porous matrix was developed to perform sample pre-treatment of whole blood. Cell separation, cell lysis and DNA purification were performed in this miniaturized device during a continuous flow process. Crossflow filtration was proposed to sep. blood cells, which could successfully avoid clogging or jamming. After blood cells were lyzed in guanidine buffer, genomic DNA in white blood cells was released and adsorbed on porous matrix fabricated by anodizing silicon in HF/ethanol electrolyte. The flow process of solns. was simulated and optimized. The anodization process of porous matrix was also studied. Using the continuous flow procedure of cell separation, cell lysis and DNA adsorption, average 35.7 ng genomic DNA was purified on the integrated microfluidic device from 1 μL rat whole blood. Comparison with a com. centrifuge method, the miniaturized device can extract comparable amts. of PCR-amplifiable DNA in 50 min. The greatest potential of this integrated miniaturized device was illustrated by pre-treating whole blood sample, where eventual integration of sample preparation, PCR, and separation on a single device could potentially enable complete detection in the fields of point-of-care genetic anal., environmental testing, and biol. warfare agent detection.
REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L37 ANSWER 17 OF 29 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2007:32739 CAPLUS
DOCUMENT NUMBER: 146:246685
TITLE: Gravity-Driven Microfluidic Particle Sorting Device with Hydrodynamic Separation Amplification
AUTHOR(S): Huh, Dongeun; Bahng, Joong Hwan; Ling, Yibo; Wei, Hsien-Hung; Kripfgans, Oliver D.; Fowlkes, J. Brian; Grotberg, James B.; Takayama, Shuichi
CORPORATE SOURCE: Department of Biomedical Engineering, University of Michigan, Ann Arbor, MI, 48109, USA
SOURCE: Analytical Chemistry (2007), 79(4), 1369-1376
CODEN: ANCHAM; ISSN: 0003-2700
PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal
LANGUAGE: English

AB This paper describes a simple microfluidic sorting system that can perform size profiling and continuous mass-dependent separation of particles through combined use of gravity (1 g) and hydrodynamic flows capable of rapidly amplifying sedimentation-based separation between particles. Operation of the device relies on two microfluidic transport processes: (i) initial hydrodynamic focusing of particles in a microchannel oriented parallel to gravity and (ii) subsequent sample separation where positional difference between particles with different mass generated by sedimentation is further amplified by hydrodynamic flows whose streamlines gradually widen out due to the geometry of a widening microchannel oriented perpendicular to gravity. The microfluidic sorting device was fabricated in poly(dimethylsiloxane), and hydrodynamic flows in microchannels were driven by gravity without using external pumps. We conducted theor. and exptl. studies on fluid dynamic characteristics of laminar flows in widening microchannels and hydrodynamic amplification of particle separation Direct trajectory monitoring, collection, and postanal. of separated particles were performed using polystyrene microbeads with different sizes to demonstrate rapid (<1 min) and high-purity (>99.9%) separation Finally, we demonstrated biomedical applications of our system by isolating small-sized (diameter <6 μm) perfluorocarbon liquid droplets from polydisperse droplet emulsions, which is crucial in preparing contrast agents for safe, reliable ultrasound medical imaging, tracers for magnetic resonance imaging, or transpulmonary droplets used in ultrasound-based occlusion therapy for cancer treatment. Our method enables straightforward, rapid, real-time size monitoring and continuous separation of particles in simple stand-alone microfabricated devices without the need for bulky and complex external power sources. We believe that this system will provide a useful tool to sep. colloids and particles for various anal. and preparative applications and may hold potential for separation of cells or development of diagnostic tools requiring point-of-care sample preparation or testing.

REFERENCE COUNT: 47 THERE ARE 47 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L37 ANSWER 18 OF 29 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2007:11058 CAPLUS
DOCUMENT NUMBER: 146:96211
TITLE: Microfluidic device for detecting soluble molecules
INVENTOR(S): Johnson, Brandon T.
PATENT ASSIGNEE(S): Boston Microfluidics, USA
SOURCE: PCT Int. Appl., 31pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2007001378	A2	20070104	WO 2005-US33728	20050920
WO 2007001378	A9	20070301		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

CA 2583406	A1	20070104	CA 2005-2583406	20050920
PRIORITY APPLN. INFO.:			US 2004-611475P	P 20040920
			WO 2005-US33728	W 20050920

AB The present disclosure provides a microfluidic device that is compatible with standard centrifuges and may be used for point-of-care disease detection. The detection methodol. may be based on microELISA.

L37 ANSWER 19 OF 29 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER:	2006:742095 CAPLUS
DOCUMENT NUMBER:	145:330768
TITLE:	Cells on chips
AUTHOR(S):	El-Ali, Jamil; Sorger, Peter K.; Jensen, Klavs F.
CORPORATE SOURCE:	Department of Chemical Engineering, Center for Cell Decision Processes, Massachusetts Institute of Technology, Cambridge, MA, 02139, USA
SOURCE:	Nature (London, United Kingdom) (2006), 442(7101), 403-411 CODEN: NATUAS; ISSN: 0028-0836
PUBLISHER:	Nature Publishing Group
DOCUMENT TYPE:	Journal; General Review
LANGUAGE:	English

AB A review. Microsystems create new opportunities for the spatial and temporal control of cell growth and stimuli by combining surfaces that mimic complex biochemistries and geometries of the extracellular matrix with microfluidic channels that regulate transport of fluids and soluble factors. Further integration with bioanalytic microsystems results in multifunctional platforms for basic biol. insights into cells and tissues, as well as for cell-based sensors with biochem., biomedical and environmental functions. Highly integrated microdevices show great promise for basic biomedical and pharmaceutical research, and robust and portable point-of-care devices could be used in clin. settings, in both the developed and the developing world.

REFERENCE COUNT: 100 THERE ARE 100 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L37 ANSWER 20 OF 29 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER:	2005:1055767 CAPLUS
DOCUMENT NUMBER:	144:33645
TITLE:	Microfluidic tool box as technology platform for hand-held diagnostics
AUTHOR(S):	Pugia, Michael J.; Blankenstein, Gert; Peters, Ralf-Peter; Profitt, James A.; Kadel, Klaus; Willms, Thomas; Sommer, Ronald; Kuo, Hai Hang; Schulman, Lloyd S.
CORPORATE SOURCE:	Diagnostic Division, Bayer Healthcare LLC, Tarrytown, NY, USA
SOURCE:	Clinical Chemistry (Washington, DC, United States) (2005), 51(10), 1923-1932 CODEN: CLCHAU; ISSN: 0009-9147
PUBLISHER:	American Association for Clinical Chemistry
DOCUMENT TYPE:	Journal
LANGUAGE:	English

AB Use of microfluidics in point-of-care testing (POCT) will require on-board fluidics, self-contained

reagents, and multistep reactions, all at a low cost. Disposable microchips were studied as a potential POCT platform. Micron-sized structures and capillaries were embedded in disposable plastics with mechanisms for fluidic control, metering, specimen application, separation, and mixing of nanoliter to microliter vols. Designs allowed dry reagents to be on sep. substrates and liquid reagents to be added. Control of surface energy to ±5 dyne/cm2 and mech. tolerances to ≤1 μm were used to control flow propulsion into adsorptive, chromatog., and capillary zones. Fluidic mechanisms were combined into working examples for urinalysis, blood glucose, and Hb A1c testing using indicators (substances that react with analyte, such as dyes, enzyme substrates, and diazonium salts), catalytic reactions, and antibodies as recognition components. Optical signal generation characterized fluid flow and allowed detection. We produced chips that included capillary geometries from 10 to 200 μm with geometries for stopping and starting the flow of blood, urine, or buffer; vented chambers for metering and splitting 100 nL to 30 μL; specimen inlets for bubble-free specimen entry and containment; capillary manifolds for mixing; microstructure interfaces for homogeneous transfer into separation membranes; miniaturized containers for liquid storage and release; and moisture vapor barrier seals for easy use. Serum was separated from whole blood in <10 s. Miniaturization benefits were obtained at 10-200 μm. Disposable microchip technol. is compatible with conventional dry-reagent technol. and allows a highly compact system for complex assay sequences with min. manual manipulations and simple operation.

REFERENCE COUNT: 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L37 ANSWER 21 OF 29 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:936452 CAPLUS
DOCUMENT NUMBER: 142:369991
TITLE: A fully automated sample-preparation cartridge for gene expression based diagnostics
AUTHOR(S): Lenigk, Ralf; Liu, Robin; Gooden, Chris; Yang, Jianing; Bittner, Michael; Trent, Jeffrey; Zenhausern, Frederic
CORPORATE SOURCE: Applied NanoBioscience Center, Arizona State University, Tempe, AZ, 85287-4004, USA
SOURCE: Special Publication - Royal Society of Chemistry (2004), 297(Micro Total Analysis Systems 2004, Volume 2), 273-275
CODEN: SROCDO; ISSN: 0260-6291
PUBLISHER: Royal Society of Chemistry
DOCUMENT TYPE: Journal
LANGUAGE: English

AB An integrated microfluidic plastic-cartridge was developed to perform fully-automated sample preparation of total RNA for gene expression monitoring expts. The cartridge contains channels, chambers, heaters, mixers, valves and pumps and was designed for single use. To facilitate the bioassay protocol, most of the reactions are being performed on the surface of magnetic beads. The device has the potential to impact health-care by reducing the time needed for genotyping assays and may enable point-of-care gene expression anal. to aid in disease diagnosis and identification of an individuals susceptibility for certain types of cancer.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L37 ANSWER 22 OF 29 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:586519 CAPLUS

DOCUMENT NUMBER: 142:151076
TITLE: An integrated digital microfluidic lab-on-a-chip for clinical diagnostics on human physiological fluids
AUTHOR(S): Srinivasan, Vijay; Pamula, Vamsee K.; Fair, Richard B.
CORPORATE SOURCE: Department of Electrical Engineering, Duke University, Durham, NC, 27708, USA
SOURCE: Lab on a Chip (2004), 4(4), 310-315
CODEN: LCAHAM; ISSN: 1473-0197
PUBLISHER: Royal Society of Chemistry
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Clin. diagnostics is one of the most promising applications for microfluidic lab-on-a-chip systems, especially in a point-of-care setting. Conventional microfluidic devices are usually based on continuous-flow in microchannels, and offer little flexibility in terms of reconfigurability and scalability. Handling of real physiol. samples has also been a major challenge in these devices. We present an alternative paradigm-a fully integrated and reconfigurable droplet-based "digital" microfluidic lab-on-a-chip for clin. diagnostics on human physiol. fluids. The microdroplets, which act as solution-phase reaction chambers, are manipulated using the electrowetting effect. Reliable and repeatable high-speed transport of microdroplets of human whole blood, serum, plasma, urine, saliva, sweat and tear, is demonstrated to establish the basic compatibility of these physiol. fluids with the electrowetting platform. We further performed a colorimetric enzymic glucose assay on serum, plasma, urine, and saliva, to show the feasibility of performing bioassays on real samples in our system. The concns. obtained compare well with those obtained using a reference method, except for urine, where there is a significant difference due to interference by uric acid. A lab-on-a-chip architecture, integrating previously developed digital microfluidic components, is proposed for integrated and automated anal. of multiple analytes on a monolithic device. The lab-on-a-chip integrates sample injection, on-chip reservoirs, droplet formation structures, fluidic pathways, mixing areas and optical detection sites, on the same substrate. The pipelined operation of two glucose assays is shown on a prototype digital microfluidic lab-on-chip, as a proof-of-concept.

REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L37 ANSWER 23 OF 29 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:338241 CAPLUS
DOCUMENT NUMBER: 141:34302
TITLE: Development of silicon microchamber array for multiple DNA amplification and detection
AUTHOR(S): Matsubara, Yasutaka; Kobayashi, Masaaki; Morita, Yasutaka; Takamura, Yuzuru; Tamiya, Eiichi
CORPORATE SOURCE: School of Materials Science, Japan Advanced Institute of Science and Technology, Tatsunokuchi, Ishikawa, 923-1292, Japan
SOURCE: Chemical Sensors (2003), 19(Suppl. B), 4-6
CODEN: KAGSEU
PUBLISHER: Denki Kagakkai Kagaku Sensa Kenkyukai
DOCUMENT TYPE: Journal
LANGUAGE: Japanese

AB This paper describes on-chip DNA amplification in a highly integrated microchamber array. The 40 nL of PCR mixt. was introduced into each chamber of the microarray precisely by using nL dispensing system through the oil layer that served as a

cover-lid. The amplified DNA was then detected with CCD camera built-in fluorescence microscope by using SYBR Green and TaqMan chemical Three different target DNA samples were amplified and detected , in the same microchamber array for the first time. Therefore, this system proves to be a promising device for the low-cost high-throughput DNA amplification and detection for point-of-care clin. diagnosis, which can also be handled by non-specialist users.

L37 ANSWER 24 OF 29 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:211253 CAPLUS
DOCUMENT NUMBER: 141:168565
TITLE: Advances in on-chip photodetection for applications in miniaturized genetic analysis systems
AUTHOR(S): Namasivayam, Vijay; Lin, Rongsheng; Johnson, Brian; Brahmasandra, Sundaresh; Razzacki, Zafar; Burke, David T.; Burns, Mark A.
CORPORATE SOURCE: Department of Chemical Engineering, The University of Michigan, Ann Arbor, MI, 48109-2136, USA
SOURCE: Journal of Micromechanics and Microengineering (2004), 14(1), 81-90
CODEN: JMMIEZ; ISSN: 0960-1317
PUBLISHER: Institute of Physics Publishing
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Microfabrication techniques have become increasingly popular in the development of next generation DNA anal. devices. Improved on-chip fluorescence detection systems may have applications in developing portable hand-held instruments for point-of-care diagnostics. Miniaturization of fluorescence detection involves construction of ultra-sensitive photodetectors that can be integrated onto a fluidic platform combined with the appropriate optical emission filters. We have previously demonstrated integration PIN photodiodes onto a microfabricated electrophoresis channel for separation and detection of DNA fragments. In this work, we present an improved detector structure that uses a PINN+ photodiode with an on-chip interference filter and a robust liquid barrier layer. This new design yields high sensitivity (detection limit of 0.9 ng μl-1 of DNA), low-noise (S/N .apprx. 100/1) and enhanced quantum efficiencies (>80%) over the entire visible spectrum. Applications of these photodiodes in various areas of DNA anal. such as microreactions (PCR), sepns. (electrophoresis) and microfluidics (drop sensing) are presented.
REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L37 ANSWER 25 OF 29 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:158439 CAPLUS
DOCUMENT NUMBER: 140:334896
TITLE: Self-Contained, Fully Integrated Biochip for Sample Preparation, Polymerase Chain Reaction Amplification, and DNA Microarray Detection
AUTHOR(S): Liu, Robin Hui; Yang, Jianing; Lenigk, Ralf; Bonanno, Justin; Grodzinski, Piotr
CORPORATE SOURCE: Microfluidics Laboratory, Motorola Labs, Tempe, AZ, 85284, USA
SOURCE: Analytical Chemistry (2004), 76(7), 1824-1831
CODEN: ANCHAM; ISSN: 0003-2700
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A fully integrated biochip device that consists of microfluidic mixers, valves, pumps, channels,

chambers, heaters, and DNA microarray sensors was developed to perform DNA anal. of complex biol. sample solns. Sample preparation (including magnetic bead-based cell capture, cell preconcn. and purification, and cell lysis), polymerase chain reaction, DNA hybridization, and electrochem. detection were performed in this fully automated and miniature device. Cavitation microstreaming was implemented to enhance target cell capture from whole blood samples using immunomagnetic beads and accelerate DNA hybridization reaction. Thermally actuated paraffin-based microvalves were developed to regulate flows. Electrochem. pumps and thermopneumatic pumps were integrated on the chip to provide pumping of liquid solns. The device is completely self-contained: no external pressure sources, fluid storage, mech. pumps, or valves are necessary for fluid manipulation, thus eliminating possible sample contamination and simplifying device operation. Pathogenic bacteria detection from approx. milliliters of whole blood samples and single-nucleotide polymorphism anal. directly from diluted blood were demonstrated. The device provides a cost-effective solution to direct sample-to-answer genetic anal. and thus has a potential impact in the fields of point-of-care genetic anal., environmental testing, and biol. warfare agent detection.

REFERENCE COUNT: 50 THERE ARE 50 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L37 ANSWER 26 OF 29 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2003:913853 CAPLUS
DOCUMENT NUMBER: 139:383120
TITLE: Microfluidic chamber array for generating concentration gradients
AUTHOR(S): Yamada, Masumi; Seki, Minoru
CORPORATE SOURCE: Department of Chemistry and Biotechnology, School of Engineering, University of Tokyo, Bunkyo-ku, Tokyo, 113-8656, Japan
SOURCE: Proceedings - IEEE Annual International Conference on Micro Electro Mechanical Systems, 16th, Kyoto, Japan, Jan. 19-23, 2003 (2003), 347-350. Institute of Electrical and Electronics Engineers: New York, N. Y. CODEN: 69ETSU; ISBN: 0-7803-7744-3
DOCUMENT TYPE: Conference
LANGUAGE: English
AB A novel micro-fluidic chamber array system is developed. This system consists of three-dimensional microchannel and microchamber network, in which nanoliter sized multiple droplets can be accurately metered and mixed simultaneously. Liquid operation was realized using pneumatic pressure due to the hydrophobic surface nature of PDMS micro-device. With this device, single injection of liquid is enough to prepare various sized aliquots, and by mixing two different kinds of liqs., concentration gradient can easily be generated. This system can further be applied to chemical or biochem. anal., such as, high-throughput screening or blood anal. for point-of-care diagnosis.

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L37 ANSWER 27 OF 29 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:529265 CAPLUS
DOCUMENT NUMBER: 138:250845
TITLE: Design, fabrication and testing of thermal components and their integration into a microfluidic device
AUTHOR(S): Smekal, T.; Rhine, D.; Weston, D.; Grodzinski, P.
CORPORATE SOURCE: Microfluidics Laboratory, Physical Sciences Research Labs, Motorola Labs, USA
SOURCE: ITherm 2002, Intersociety Conference on Thermal and

Thermomechanical Phenomena in Electronic Systems, 8th, San Diego, CA, United States, May 30-June 1, 2002 (2002), 1039-1045. Editor(s): Amon, Cristina H. Institute of Electrical and Electronics Engineers: New York, N. Y.
CODEN: 69CVXV; ISBN: 0-7803-7152-6

DOCUMENT TYPE: Conference
LANGUAGE: English

AB Microfluidics devices and Microsystems are gaining significant popularity as they provide attractive solns. to automate and miniaturize the handling of fluids, reagents and other fluids used in DNA sample preparation, synthesis and screening. These devices greatly enhance a multitude of potential applications in the areas of point-of-care diagnostics, pharmacogenomics, high-throughput drug discovery, forensics, food safety, plant genomics, agriculture and military applications. In this paper we discuss design, integration and testing of thermal components in a microfluidic device designed for on-chip genetic sample preparation A typical microdevice must perform several operations to be capable of analyzing a sample of body fluid (blood, urine, saliva), extracting DNA from concentrated cells, hybridization, purifying and amplifying DNA, and finally detecting DNA fragments of interest. In conventional bench-top PCR thermal cyclers, samples are mixed in stationary vessels and undergo a series of temperature shifts programmed to optimize the efficiency of each of the PCR steps. The time at a set temperature is the most critical component for each step. Reduction of the sample volume and improvement of the ramp times between temperature steps makes micro-PCR devices desirable. Thermal components such as heaters and resistive thermal devices (RTDs) are fabricated as an integral part of a complete genetic sample preparation micro-system. The ability to precisely control the temperature is a critical component of most microfluidic devices intended for on-chip genetic sample preparation Devices were fabricated and demonstrated a temperature variation of .apprx. 1° over the entire sample volume A design of the device, including chamber dimensions, placement of the heating and cooling elements will be presented. The results of temperature cycling expts. will be shown. We have measured the heating rate of .apprx.2.4° /s and the cooling rate of .apprx.2.0° /s for devices tested under active heating/cooling control. Finally, a brief overview of relevant microfabrication methods will also be presented.

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L37 ANSWER 28 OF 29 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:333294 CAPLUS
DOCUMENT NUMBER: 138:69199
TITLE: Disposable smart microfluidic-based biochips for clinical diagnostics
AUTHOR(S): Ahn, Chong H.; Choi, Jin-Woo; Kim, Sanghyo; Sohn, Young Soo; Beaucage, Gregory; Nevin, Joseph H.
CORPORATE SOURCE: Microsystems and BioMEMS Lab, Department of Electrical and Computer Engineering and Computer Science, University of Cincinnati, Cincinnati, OH, 45221-0030, USA
SOURCE: Symposium Proceedings - International Semiconductor Device Research Symposium, Washington, DC, United States, Dec. 5-7, 2001 (2001), 427-429. Institute of Electrical and Electronics Engineers: New York, N. Y.
CODEN: 69CNPX; ISBN: 0-7803-7432-0
DOCUMENT TYPE: Conference
LANGUAGE: English

AB An innovative full integrated, plastic microfluidic chip has been developed for the dual applications of a fully stand-alone biochip. The ultimate goal is to develop a wrist watch-type analyzer using a disposable smart plastic chip cartridge , which possess state-of-the-art, structurally programmable, reconfigurable and multiple anal. capabilities. The portable point care laboratory instrument is based on a low-cost disposable microfluidic biochip. The plastic fluidic chip includes fully integrated microchannels, passive valves, passive multiplexers, mixers, dispensers, pressurized air bladders, and air/buffer reservoirs. The wrist watch-type, point-care device monitors the biochem. changes and establishes the individual patient's baseline data or normal ranges which are much more sensitive than general population based normal ranges in determining the biochem. changes of an individual patient. Diagrams describing the apparatus assembly and operation are given.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L37 ANSWER 29 OF 29 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2001:693935 CAPLUS

DOCUMENT NUMBER: 136:337096

TITLE: Genetically designed biosensing systems for high-throughput screening of pharmaceuticals, clinical diagnostics, and environmental monitoring

AUTHOR(S): Wenner, Brett Romain; Douglass, Phillip; Shrestha, Suresh; Sharma, Bethel; Lai, Siyi; Madou, Marc J.; Daunert, Sylvia

CORPORATE SOURCE: Departments of Chemistry and Pharmaceutical Sciences, University of Kentucky, Lexington, KY, 40506, USA

SOURCE: Proceedings of SPIE-The International Society for Optical Engineering (2001), 4252(Advances in Fluorescence Sensing Technology V), 59-70
CODEN: PSISDG; ISSN: 0277-786X

PUBLISHER: SPIE-The International Society for Optical Engineering

DOCUMENT TYPE: Journal; General Review

LANGUAGE: English

AB A review. The genetically-modified binding proteins calmodulin, the phosphate binding protein, the sulfate binding protein, and the galactose/glucose binding protein have been successfully employed as biosensing elements for the detection of phenothiazines, phosphate, sulfate, and glucose, resp. Mutant proteins containing unique cysteine residues were utilized in the site-specific labeling of environment-sensitive fluorescent probes. Changes in the environment of the probes upon ligand-induced conformational changes of the proteins result in changes in fluorescence intensity. Calibration plots for the resp. analytes were generated that relate the concentration of analyte with a change in fluorescence intensity of the biosensing element. The assays were also characterized in terms of their selectivity and the stability of the binding protein. To illustrate the usefulness of the reagents in high-throughput analyses for application in drug discovery, point -of-care diagnostics, and environmental monitoring, the assays were evaluated on a novel system - the CD platform. This microfluidic compact disk-based platform utilizes centrifugal force to control the release, flow, and mixing of buffers, reagents, and analytes in channels and reservoirs contained on the microfabricated CD. Coupling of fluorescence detection on this system with the genetically designed reagents provides highly sensitive assays for microscale applications. Specifically, the labeled proteins were shown to be sensitive to increasing concns. of analyte in nL, μL, nL, and pL volume samples, with limits of detection in the sub-micromolar range.

In addition, sol-gel composites have been investigated as a means of entrapping the aforementioned biorecognition elements for the purpose of immobilizing the proteins on a sensing platform such as the CD. The advantages of the CD platform and its application in drug discovery and diagnostics will be discussed, along with preliminary expts. showing the response of PBP in sole-gel composites.

REFERENCE COUNT: 50 THERE ARE 50 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> FIL STNGUIDE

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	556.49	556.70

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	-44.46	-44.46

FILE 'STNGUIDE' ENTERED AT 19:02:43 ON 31 MAY 2007

FILE CONTAINS CURRENT INFORMATION.
LAST RELOADED: May 25, 2007 (20070525/UP).